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Federal Aviation Administration

Advisory Circular

Subject: CHANGE 1 TO MANAGEMENT OF AIRPORT INDUSTRIAL WASTE

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1. **PURPOSE.** This change provides guidance on best management practices to eliminate, prevent, or reduce pollutants in storm water runoff associated with airport industrial activities.

The change number and date of the changed material are located at the top of the page. Pages not revised retain the same heading information.

2. **PRINCIPAL CHANGES.** This change introduces guidelines for the development of airport oriented storm water pollution prevention plans.

PAGE CONTROL CHART

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CHAPTER 12. AIRPORT ORIENTED STORM WATER POLLUTION PREVENTION PLANS

62. **INTRODUCTION.** On November 16, 1990, the United States Environmental Protection Agency (USEPA) issued the final regulations regarding National Pollutant Discharge Elimination System (NPDES) permits (40 CFR Parts 122-124) for storm water discharges from municipal and industrial activities. These regulations require the following identified industrial facilities permit holders to develop a *Storm Water Pollution Prevention Plan (SWPPP).*

> *"Transportation facilities classified as Standard Industrial Classifications ... 45 ... which have vehicle maintenance shops, equipment cleaning operations, or airport deicing/anti-icing operations are regulated industrial activities. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations ... are associated with industrial activity."*

a. **Airport Oriented SWPPPs.** SWPPPs require airport authorities to identify and implement schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to eliminate, prevent, or reduce pollutants in storm water runoff from their site. This chapter emphasizes *source reduction* through the use of *Best Management Practices (BMPs).* The USEPA SWPPP guidance addresses the preparation of a SWPPP. Since the USEPA SWPPP guidance is general in nature, supplemental guidance based on aviation activities is provided to assist in the preparation of airport oriented SWPPPs.

b. **Integration of Airport and Tenant SWPPPs.** The USEPA holds airport authorities responsible for ensuring that the airport as a whole is in compliance with the permit conditions. Cooperative management efforts to manage similar airport and tenant generated pollutants can lead to lower compliance cost. Other strategies to improve compliance efforts are including best management practices and including a "right of entry" clause in tenant leases. This practice clearly emphasizes a tenant's critical role in the airport's compliance with the permit. In general, it is recommended that airport and tenant SWPPPs be integrated to provide more effective controls of storm water pollutants.

63. **ORGANIZATION.** A five phase approach to developing a SWPPP is shown in table 12-1, and review of the special SWPPP requirements described in section 6 is recommended.

a. **Baseline Requirements of the General Permit.** Sections 1 - 5 describe the "baseline" SWPPP requirements specified in the general permit and suggest options to address those requirements.

b. **Special Requirements of the General Permit.** Section 6 describes special requirements dealing with particular activities or other environmental regulations that some airport authorities may have to include in their plan.

c. **Other General Permit Requirements.** SWPPPs should include schedules for implementing activities and, where required by Federal, state, or local regulations, an identification of the signature authority.

Phase 1 - Planning and Organization
Phase 2 – Assessment
Phase 3 - BMP Identification
Phase 4 - Plan Implementation
Phase 5 – Evaluation/Monitoring

Table 12-1. Five phase approach for developing airport oriented SWPPPs

d. **Authorized State and Local Requirements.** Although in most cases state and local requirements will be similar to the Federal requirements, they may also be more stringent. Airport authorities should contact their state and local environmental authorities to determine additional requirements for their plan.

e. **Additional USEPA Requirements**. Because of the multitude of airport activities, the Director of USEPA may develop additional permit requirements to reduce pollutants in storm water. When evidence of water quality problems associated with a specific airport activity exists, that activity may be regulated. In such a case, the airport SWPPP will need to be modified to address the activity.

f. **Sample SWPPPs**. Appendix 3 provides sample worksheets to organize information and implement plans. Appendices 4 and 5 provide samples of an airport SWPPP and an airport tenant SWPPP regulated as a Section 313 facility (see paragraph 97), respectively.

64. **ACCIDENTS OR INCIDENTS ON THE AIRPORT**. Vehicle or aircraft incidents or accidents can be sources of storm water contamination. To balance safety and environmental concerns, Airport Emergency Plans (14 CFR Part 139.325) should integrate followup containment and cleanup BMPs. *It is emphasized, however, that although spills resulting from incidents or accidents should be responded to, securing the well being of people comes first.*

65. **USEPA GUIDANCE MANUALS.** For a more comprehensive discussion on developing plans, please refer to USEPA 1992 guidance manuals, *EPA 832-R-92-006, Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices*, and *EPA 832-R-92-005, Storm Water Management For Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.* These manuals are available from the National Technical Information Service (NTIS), (703) 487-4650, and the USEPA Resource Center, (202) 260-7786.

SECTION 1. PLANNING AND ORGANIZATION (PHASE 1)

66. **INTRODUCTION**. This phase describes the starting point for the development of airport SWPPPs.

67. **POLLUTION PREVENTION TEAM**. The first step is to identify the individuals that will comprise the storm water pollution prevention team. Team members frequently include airport staff managers, supervisors of airport and tenant facilities, environmental managers, engineering personnel, airfield maintenance personnel, etc. A senior manager should have overall responsibility for the plan. Worksheet No. 1 (see appendix 3) provides a means to list members and their information which should be displayed prominently at facilities so that employees can identify the proper contacts. This practice should allow for quicker corrective actions and potential reductions in cleanup and remediation costs.

a. **Experience Level**. The individuals chosen should have backgrounds that fit the type of activities or facilities subject to regulation. This correlation offers a better insight in understanding how an airport activity affects storm water and how to eliminate, prevent, or reduce resulting pollutants from entering storm water runoff. In return, greater opportunities exist to implement less costly, highly effective BMPs.

b. **Basic Responsibilities**. The basic responsibility of the team is to develop an airport SWPPP for airport compliance. After development, the team's responsibility shifts to ensuring implementation, maintenance, and revision. The team also should ensure that tenants develop, implement, and integrate their SWPPPs into the airport's SWPPP. Airport authorities should clearly define each member's area of responsibilities and duties. Some members may need signatory authority.

c. **General Duties**. Team members will perform initial site assessments, identify pollutant sources and their associated risks, identify BMP alternatives, implement their sections of the plan, and evaluate and monitor the effectiveness of the plan.

68. **REFERENCING OTHER PLANS**. Reviewing other airport plans and environmental plans to determine what provisions, if any, can be referenced, may streamline the development of a SWPPP. USEPA allows this practice provided referenced plans are available upon request, for instance, during site evaluations by environmental authorities. Regardless of the degree of reference, the airport SWPPP should be a stand alone, comprehensive document.

a. **Airport Plans**. Examples of airport plans that should be reviewed for potential reference are as follows: the aircraft fuel dispensing plan, temporary erosion control measures in construction plan (reference Item P-156, Temporary Air and Water Pollution, Soil Erosion,

and Siltation Control, AC 150/5370-10, *Standards for Specifying Construction of Airports*, current edition), airfield daily inspection plan, airport emergency plan, and the snow and ice control plan.

b. **Other Environmental Plans.** Other environmental plans worth reviewing for reference are as follows: Preparedness, Prevention, and Contingency Plan (40 CFR Parts 264 and 265), Spill Prevention Control and Counter Measures Requirements (40 CFR Part 112), Toxic Organic Management Plan (40 CFR Parts 413, 433, and 469), and Occupational Safety and Health Administration (OSHA) Emergency Plan (29 CFR Part 1910).

69. **SPECIAL REQUIREMENTS AND DUTIES.** When a tenant is subject to reporting requirements under the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 313 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986) for water priority chemicals, special requirements from that program become part of the airport SWPPP. Paragraphs 75, 79, 90, 97, and 104 (from paragraph 2.7.2 of EPA 832-R-92-006) provide airport authorities those special requirements which should be addressed either in the plan or in a separate plan developed by the tenant. Furthermore, permits require the integration of this type of tenant plan with the airport SWPPP.

a. **Designated Member.** If a reporting facility exists, the airport authority should list in their plan a member accountable for spill prevention of regulated Section 313 facilities.

b. **Specific Responsibilities.** Specific responsibilities for the designated individual include, at a minimum, setting up necessary spill emergency procedures and reporting requirements to isolate, contain, and clean up spills and emergency releases of regulated Section 313 water priority chemicals before a discharge can occur.

SECTION 2. ASSESSMENT (PHASE 2)

70. **INTRODUCTION.** This phase focuses on identifying and assessing the impact of actual and potential pollutant sources that can contaminate storm water runoff. Worksheet No. 7 provides a means to record pollutant sources and related management practices.

a. **Identifying Pollutant Sources.** Team members should identify activities and significant materials resulting from current management practices and airport activities which can be sources of significant pollution. The review process should consider both wet and dry weather conditions since pollutant sources can discharge from storm water conveyances that drain airport and tenant facilities during either condition. To improve the selection of low cost, effective BMPs, plans should contain a brief description of how those sources add pollution to storm water discharges. Depending on the negotiated permit, plans may need to include regulated parameters for specific pollutant sources, e.g., 5-day biochemical oxygen demand (BOD_5) of aircraft deicing/anti-icing fluids.

b. **Additional SWPPP Items.** Depending on site specific conditions, plans may need to include information about the following:

(1) Significant materials (see paragraph 72(a)) exposed to precipitation.

(2) Regulated tenants and their industrial activities and significant materials exposed to precipitation.

(3) Past major spills or leaks.

(4) Unauthorized nonstorm water discharges (see paragraph 74).

71. **DEVELOPING AN AIRPORT FACILITY SITE MAP.** An airport facility site map that contains complete information on activities that pollute storm water discharges is an essential part of any SWPPP. Worksheet No. 2 lists the minimum details to include on the site map.

a. **Locating Outfalls.** Along with airport facilities, tenant facilities, and the airport property line, all airport storm water outfalls (these conveyances for point source discharges are also termed discharge points), where storm water enters a receiving body of water or a municipal storm sewer system, should be identified. For the latter case, the on-site drainage point to the municipal storm sewer system is considered the storm water outfall.

b. **Receiving Bodies of Water.** Site maps should identify receiving bodies of water, such as rivers,

streams, ponds, and lakes, on or adjacent to the airport with their legal name whenever possible.

c. **Delineating Drainage Areas.** The site map should depict all drainage areas and direction of flows that supply each outfall. This can be done by working backwards from each outfall to airport and tenant facilities.

d. **Airport Activities Within a Drainage Area.** Fundamental to the delineation of potential pollution sources is the identification and the location within drainage areas of contributing pollutants or exposed significant materials that may contaminate storm water runoff discharging at the outfall(s). Past spills and leaks should also be located on the site map. The site map should describe and locate activities exposed to precipitation that are considered to be high risk waste generating areas and potential pollutants of storm water runoff. Potential high risk waste generating areas include the following: (i) aircraft, vehicle, and equipment maintenance and cleaning areas, (ii) aircraft and runway deicing/anti-icing areas, (iii) material storage areas, (iv) loading/unloading docks, (v) areas abutting runway maintenance activities, (vi) aircraft servicing areas, and (vii) airport and vehicle fuel systems, fueling areas, and fuel farms.

e. **Structural Drainage Controls.** The site map should identify and briefly describe drainage controls that direct or treat storm water runoff. These include storm drains, culverts, berms, open channels, subsurface drains, flow diversion boxes, and detention/retention ponds.

f. **Soil Erosion and Sedimentation Controls.** Site maps also should identify areas having potential for significant soil erosion and sedimentation due to airport activities, topography, or other factors. The site map should briefly depict stabilization or vegetative controls used to limit such problems (see paragraph 88 for additional information).

72. **MATERIAL INVENTORY AND DESCRIPTION OF EXPOSED SIGNIFICANT MATERIALS.** Each facility should inventory the types of materials handled, stored, or processed onsite. SWPPPs require an inventory of materials at airports that may be exposed to precipitation in the past three years. The more comprehensive the inventory, the more likely the plan will identify all potential sources of contamination. Worksheet No. 3 provides a means to inventory materials, describe their location and quantities, and narrate handling, storing, and disposal practices. Worksheet No. 3A provides a means to inventory materials that have been exposed to storm water in the past three years and/or are currently exposed. Worksheet No. 3A should be included in the SWPPP.

a. **Significant Materials.** Of the materials identified, USEPA places special emphasis on materials defined as *significant materials* (40 CFR Part 122.26(b)(12)). Significant materials commonly found at airports include fertilizers (phosphorus and nitrogen), pesticides, herbicides, organic solvents and phenols, toxic metals from maintenance activities, sand, salt stockpiles (see paragraph 98 for special requirements regarding salt stockpiles), fuels, detergents, aircraft and runway deicing/anti-icing products, and chemicals used by tenants regulated under SARA Title III, Section 313 (see paragraph 97 for special requirements). The SWPPP should include narratives regarding significant materials which have been handled, treated, stored, or disposed of in a manner that allowed exposure to storm water between the time of three years prior to the date of the issuance of the permit and the present. It should also include the location and method of onsite storage and/or disposal of significant materials.

b. **Management Practices Regarding Materials.** Plans should include brief narratives of the management practices used to prevent exposed materials from coming into contact with storm water between the time of three years prior to the date of the issuance of the permit and the present. Inadequacies should be identified and rectified by considering activity-based practices, instead of structural-based practices, to reduce the cost of environmental compliance. For example, regularly scheduled sweeping, end of day inspections, or improved handling of products are less expensive than installing and maintaining storm water devices such as an oil/water separator.

c. **Treatment Practices of Materials.** Plans should include brief narratives of any treatment or pretreatment of materials released into storm water runoff. Treatment considerations include how to eliminate material exposure, directing material runoff away from storm water collection systems or a storm water conveyance (prevention), and reducing the quantities of materials on hand. AC 150/5220-18, *Buildings for Storage and Maintenance of Airport Snow and Ice Control Equipment and Materials*, current edition, provides guidance for the storage of deicing/anti-icing products and other materials.

73. **LIST OF PAST SIGNIFICANT SPILLS AND LEAKS.** Plans should include a list of significant spills and leaks of toxic or hazardous chemicals that have occurred on airport property after the date of three years prior to the effective date of the permit. Worksheet No. 4

provides a means of doing this. Areas on the airport where significant spills or leaks have occurred should receive special examination when identifying BMPs. During the term of the permit, the list should be updated as necessary. Plans should include spill prevention and response procedures to reduce the likelihood of future spills or leaks, and thereby, lower cleanup and remediation costs.

a. **Definition of Significant Spills**. USEPA defines significant spills to include releases within a 24-hour period of hazardous substances in excess of reportable quantities. Reportable quantities, listed in 40 CFR Parts 117 and 302, are set amounts of substances in pounds, gallons, or other units. Examples of regulated substances are solvents from vehicle maintenance shops, waste metals from aircraft plating processes, and chemicals under Section 311 of the Clean Water Act (CWA) (40 CFR Parts 110.10 and 117.3) or Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (40 CFR Part 302.4).

b. **Definition of Releases**. USEPA defines releases to include any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

c. **National Response Center**. As soon as possible, airport authorities and tenants should report releases of regulated hazardous substances, in excess of reportable quantities within any 24-hour period, to the National Response Center at 1-800-424-8802.

d. **Hazardous Waste Material Management**. Airport authorities' responsibilities, with respect to hazardous wastes generated on the airport, are outlined in chapter 6. Issues discussed include USEPA requirements for generator identification number to transport hazardous waste off the airport, tank storage, Uniform Hazardous Waste Manifests, employee training, contingency plans, and emergency procedures.

e. **Recording Deicing/Anti-icing Activities**. Recordkeeping requirements of the plan for deicing/anti-icing activities are defined in Part III.B.2, Multiple Anticipated Discharges, of the general permit.

(1) **Release Records**. The hazardous material release record should include the date, type, estimated amount of material released, and a description of the circumstances leading to the release.

(2) **Identified Measures**. Plans should identify the implemented BMPs used to eliminate, prevent, or reduce such releases to storm water runoff.

(3) **Other Regulations**. Plans may need to include other reports for deicing/anti-icing chemicals under other environmental regulations, such as SARA Title III, Section 304, 40 CFR Part 355.40 (State Emergency Planning Commission), and any local emergency planning committee for areas likely to be affected by such releases. USEPA requests that releases, even from routine deicing/anti-icing activities, be reported in accordance with applicable regulations.

74. **NONSTORM WATER DISCHARGES ASSESSMENT AND CERTIFICATION**. Non-storm water discharges not authorized by a NPDES permit are illegal. A separate NPDES permit will be required. Such discharges may be a combination of improper or illicit connections, spills, or improper dumping. Precluding unauthorized discharges provides opportunities to dramatically improve the quality of storm water discharges from the airport.

a. **Authorized Nonstorm Water Discharges**. The general permit allows the following types of nonstorm water discharges:

(1) Discharges from firefighting activities.

(2) Fire hydrant flushing.

(3) Potable water sources including waterline flushing.

(4) Irrigation watering/drainage.

(5) Lawn watering.

(6) Uncontaminated ground water and underground drains.

(7) Discharges from springs and wetlands.

(8) Routine exterior building washdown that does not use detergents.

(9) Air conditioning condensate.

(10) Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred and where detergents were not used.

(11) Foundation or footing drains where flows were not contaminated with process materials.

b. **Separate NPDES Permit.** Unauthorized dry weather discharges, such as discharges resulting from runway maintenance, aircraft deicing/anti-icing operations, or vehicle and aircraft washes, require a separate NPDES permit based either on application Form 2C, *Wastewater Discharge Information*, for process water, or Form 2E, *Facilities Which Do Not Discharge Process Wastewater*, for nonprocess water.

c. **Screening Illicit Tenant Connections.** Another possible source of unauthorized nonstorm water discharges is illicit tenant connections to airport storm water conveyances, which often go unidentified. The implementation of an illicit connection screening program is recommended.

(1) **Verification Methods.** Traditional verification methods to detect nonstorm water discharges mixing with final storm water discharges include introduction of fluorometric or other dyes into collection points, back tracing storm sewer discharges during dry weather conditions, physical inspections of storm sewers, measuring pH during dry weather flows, or performing colormetric testing to detect chlorine, detergents, and metals. A comprehensive evaluation usually calls for several verification methods.

(2) **Corrective Actions.** If an illicit connection is discovered, it should be disconnected or a separate NPDES permit application submitted, either Form 2C or Form 2E, to the appropriate permitting authority.

d. **Nonstorm Water Connections.** Except for firefighting activities, plans should identify nonstorm water connections authorized by the permit. For the pollutant components of nonstorm water discharges, plans should identify the BMPs and ensure their implementation.

e. **Signed Certification.** Plans should include a certification that all storm water discharges from the airport property have been tested or evaluated for the presence of nonstorm water discharges. The certification includes the identification of potential significant sources of nonstorm water discharges, a description of the methods used and the results of any tests for such discharges, the location of the onsite drainage points that were tested, and the dates of the tests. The signed certification should be in accordance with Part VII.G. of the general permit.

f. **Worksheet No. 5.** Worksheet No. 5 provides a means to certify required information, such as identification of potential significant sources of nonstorm water discharge(s), evaluation date, method of evaluation, and results of testing.

g. **Worksheet No. 6.** Worksheet No. 6 provides a Failure to Certify Notification form. If certification of a nonstorm water discharge is not feasible because of access to an outfall, manhole, or other access points to the final storm water discharge point(s), then a description should note why the certification was not feasible along with the identification of the potential significant source of nonstorm water discharges at the site. Schedules for the airport authority to notify the permitting authority are described in the permit.

75. **STORM WATER MONITORING AND SAMPLING DATA.** If existing storm water sampling data are available, the facility will need to provide a summary of the data and describe the sample collection procedures used. Additionally, scheduled storm water sampling throughout the term of the permit will need to be conducted for certain activities and facilities. Summaries of the data describing pollutants in storm water discharges collected during the term of the permit should be kept with the plan. Data are a means to characterize the quality of storm water discharges in terms of the potential environmental risk by identifying the types and amounts of contaminating pollutants. Once identified, back tracking should determine the source of problem pollutants. Past data also provides useful information on areas which contributed pollutants to storm water discharges and the problem pollutants.

a. **Sampling Data Tests.** Generally, where sampling is required for a facility, the airport authority is required to collect and analyze grab and composite samples in accordance with 40 CFR Part 136. The summary of these data should also describe the sample collection procedures used. Be sure to cross reference the particular storm water outfall sampled to one of the outfalls designated on the airport site map.

b. **Aircraft and Runway Deicing/Anti-icing Activities.** Monitoring requirements for aircraft and runway deicing/anti-icing activities depend on the permit. The threshold for monitoring in the baseline general permit is based on the annual number of flight operations. Airports with over 50,000 flight operations per year with aircraft or runway deicing/anti-icing operations are required to monitor annually for oil and grease, BOD_5, chemical oxygen demand (COD), total suspended solid (TSS), pH, and the primary ingredients used in the deicing/anti-icing products.

c. **Primary Metal Waste Generators.** Airport or aircraft maintenance facilities which generate primary metal waste are required to monitor semiannually for oil

and grease, COD, TSS, pH, acute whole effluent toxicity, Total Recoverable Lead, Cadmium, Copper, Arsenic, Chromium, and any pollutant limited in an effluent guideline to which the facility is subject.

d. **SARA Title III, Section 313 Facilities.** Airport operators and airport tenants required to report under SARA Title III, Section 313 are required semiannually to monitor oil and grease, BOD_5, COD, TSS, Total Kjeldahl Nitrogen, Total Phosphorus, pH, acute whole effluent toxicity, and any Section 313 water priority chemical for which the facility reports in the baseline general permit. Prudent but adequate monitoring is important since monitoring costs can be the largest annual cost item. Reduction of toxicity can be another major cost for facilities that may need to upgrade existing containment systems to meet permit requirements.

76. **SITE EVALUATION SUMMARY.** Plans should contain a narrative description of the potential pollutant sources and identification of any pollutant source of concern which can be generated by the following airport activities:

a. Cargo loading and unloading operations

b. Outdoor storage activities

c. Outdoor manufacturing or process activities

d. Fueling operations

e. Vehicle and aircraft maintenance, painting, and lubrication

f. Deicing/anti-icing activities

g. Significant dust or particulate generating activities

h. On site waste disposal practices

Assessment should yield specific information on areas, activities, and materials that contribute contamination of storm water runoff. Depending on the extent of the detail, the information can identify less costly activity-based BMPs to prevent or control pollutants from such activities.

SECTION 3. BEST MANAGEMENT PRACTICES (BMP) IDENTIFICATION (PHASE 3)

77. **INTRODUCTION.** This phase identifies BMPs to address pollutant sources. BMPs are schedules of activities, prohibitions of practices, maintenance procedures, structures, and other practices to prevent or reduce contamination in storm water runoff. Certain BMPs may not apply to a particular geographical region. Applicable tenant BMPs should be referenced in the airport SWPPP.

a. **Activity-Based BMPs.** Activity-based BMPs or nonstructural BMPs emphasize *source reduction* through such measures as:

(1) good housekeeping activities,

(2) preventative maintenance schedules,

(3) material management procedures,

(4) spill prevention and response procedures,

(5) visual inspections,

(6) sediment and erosion control,

(7) management of runoff,

(8) recordkeeping and reporting,

(9) employee training, and

(10) material and product substitution.

Of the listed items, good housekeeping, visual inspections, and employee training may be the most cost-effective and direct means to provide for initial source reduction of contaminants released to storm water runoff. Section 4 provides guidance on employee training programs, implementation, and training schedules.

b. **Structural-Based BMPs.** Structural-based BMPs use physical measures to:

(1) minimize pollution (prevention and containment) or

(2) divert pollutants for treatment (mitigation and ultimate release).

c. **Effectiveness of BMPs**. Success depends on:

(1) appropriately targeting the cause of the pollution/spill, e.g., lack of employee training, improper (or the lack of) procedures, or poorly maintained equipment.

(2) understanding site constraints and the storm water quality objectives.

(3) identification of unique capabilities, limitations, and overall cost of BMP options.

(4) storm water pollution prevention team interaction including cross-functional, organizational cooperation.

d. **Specific BMPs for Facilities or Activities.** Pollutant elimination, prevention, or runoff treatment is best handled by BMPs tailored to a given problem. Examples are aerated detention/retention basins for BOD degradation of glycol. In determining which BMP represents an economically achievable option, the following factors should be considered:

(1) age of equipment and facilities involved;

(2) process employed;

(3) engineering aspects of the application of various types of treatment or control techniques;

(4) requirements for process changes;

(5) cost of achieving effluent reduction; and

(6) non-water quality environmental impact (including energy requirements).

e. **BMP Cost Considerations.** During the identification phase, the pollution prevention team should rank targeted activities and facilities on the basis of pollution potential. After prioritizing pollutants, selection of BMPs should consider not only the effectiveness of the alternative, but also the costs for its implementation and maintenance. These two measures provide the team a means to determine which BMPs are most cost-effective. Costly BMPs that resolve only minor pollutants should be avoided. Under certain conditions, minimizing pollutants entering storm water runoff is more cost-effective than treating contaminated storm water runoff, i.e., confronting source reduction as far upstream as possible can maximize the economics downstream. Source reduction for given pollutants may be implemented immediately through activity-based BMPs instead of structural-based BMPs that require more planning, a lengthier period for implementation, or have particular drawbacks, such as physical space requirements.

78. **GOOD HOUSEKEEPING.** Good housekeeping practices are inexpensive, activity-based BMPs which can be performed easily by employees or tenants. Plans should describe how implemented practices reduce the contribution of pollutants to storm water. Examples of good housekeeping practices that should be implemented regularly are as follows:

a. **Routine Clean-up Operations.**

(1) **Daily Activities.**

(a) **Airport Facilities.** Maintaining working and storage areas in a clean and orderly manner are inexpensive, activity-based BMPs which can be implemented immediately. Besides scheduled sweepings, removing loose and trapped materials in and around drainage inlets or other similar structures should be part of the daily routine.

(b) **Aircraft Servicing.** Spills of lavatory waste, oils, and hydraulic fluids should be attended to so they will not contribute pollutants to storm water. Paragraph 81 provides guidance for fueling/defueling spills.

(c) **Cleaning Small Spills.** A product's material safety data sheet (MSDS) is a good source of recommended actions for spills and container leaks. Common BMPs for cleaning small spills or releases are sweeping, vacuuming, or using sorbents and gels. Additionally, MSDSs provide emergency phone numbers (manufacturer and an 800 hotline) and occupational health hazard information.

(2) **Seasonal Activities.**

(a) **Snowbanks.** Snowbanks during the thawing season can cause not only environmental pollution but safety concerns. Debris, trash, and other foreign objects imbedded in snowbanks should be recovered and disposed of properly. To reduce deicing/anti-icing chemicals (BOD impacts) in receiving bodies of water, snow banks should be at a distance from inlet drains and other airport discharge points. AC 150/5200-30, *Airport Winter Safety and Operations*, current edition, provides guidance on height and location of snowbanks near runways during clearing operations.

(b) **Turf Management.** Refraining from over-application of fertilizers is one way to lessen chemical excess mixing with storm water runoff. The

airport authority should emphasize to employees the need for a good turf cover to prevent soil errosion and sedimentation. Sediments have the ability to bind with other contaminants which can then be transported downstream. Allowing grass clippings to remain on the ground as a form of soil nutrient is another activity-based BMP that contributes to good turf and lower fertilizer costs.

(c) **Agricultural Aerial Spraying.** Even though airport authorities may not operate agricultural spraying equipment, they have a responsibility for preventing pesticide contamination of storm water. Targeting specific BMPs to the use of agricultural chemicals can be effective. For example, cleaning of equipment and pesticide containers at the end of the day or when different chemicals are sprayed should be followed by proper disposal of waste water.

b. **Trash, Litter, and Recyclable Management Program.** An immediate and inexpensive BMP to reduce the amount of trash or hazardous waste that could enter the storm water drainage system is having appropriate trash recepticals available. Acceptable practices should be observed when recycling or disposing of used oil and batteries (vehicle and aircraft). Containers should be of adequate size, routinely emptied, and checked for leaks. Additional improvements can be achieved by placing trash containers away from drainage inlets and covering those containers exposed to the elements.

c. **Material Inventory Management Program.** The activity-based BMP of rotating stock, old to front, should encourage employees to use older products first. Effective shelf life programs help to reduce over-purchasing of materials with the monetary benefits of lower storage and handling costs and, for products whose shelf life has expired, replacement and disposal costs. Disposal cost of unused portions may be further lowered by purchasing products in containers which closely match the quantities used. Locating product storage areas in facilities away from drainage areas is a BMP that affords extra cleanup time of spills before they enter floor drains.

79. **PREVENTIVE MAINTENANCE PRACTICES.** Plans should include scheduled practices for preventive maintenance of facilities, equipment, and storm water structures and devices.

a. **Runway Maintenance.** Surface texture maintenance and runway grooving are activities with pollution potential. AC 150/5320-12, *Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces*, current edition, provides BMPs for both activities.

b. **Facility Equipment.** Facility equipment should receive scheduled inspections and preventive maintenance. Table 12-2 provides items whose malfunction can cause spills, leaks, or other situations leading to contamination of storm water runoff. Such items provide a starting point for preventive maintenance programs.

c. **Storm Water Structures and Devices.** Storm water structures and devices should receive timely inspections, such as cleaning out collected debris from oil/water separators after a heavy storm event. Plans should include routine inspection of traditional storm water management practices used to divert, infiltrate, reuse, and otherwise manage storm water runoff to reduce pollutants discharged from airport property.

d. **SARA Title III, Section 313 Facilities.** Permits impose additional inspection requirements for preventive maintenance of tenant facilities subject to SARA Title III, Section 313 for water priority chemicals (general permit Part IV.D.7.b.(7)). Inspections are usually based on facility design and operational experience. Corrective action should be taken immediately or the facility unit or process should be shut down until the problem is repaired. All areas of the regulated facility should be inspected for the following at the intervals specified in the plan:

(1) Leaks or conditions which would lead to discharges of Section 313 water priority chemicals.

(2) Conditions which could lead to direct contact of storm water with raw materials, intermediate materials, waste materials, or products.

(3) Leaks, wind blowing, corrosion, support or foundation faiure, or other deterioration or noncontainment of piping, pumps, storage tanks and bins, pressure vessels, process and material handling equipment, and material bulk storage areas.

80. **SPILL PREVENTION AND RESPONSE PROCEDURES FOR AIRPORT FACILITIES.** SWPPPs should include spill prevention and response procedures for airport owned facilities (and special procedures for particular tenant facilities as warranted) including regular visual inspections, adopting good housekeeping practices, and reducing and reusing process materials to minimize waste generation on site.

a. **Airport Owned Facilities.** Spill prevention programs should include practices for handling and storing products. Response procedures should include how to use spill control materials and equipment, contain spills, isolate spills from storm sewer collection points (minimization), reporting requirements, and disposal of collected material.

b. **Recordkeeping and Internal Reporting Procedures.** The plan should identify an employee responsible for maintaining records of spills, actions taken, and reporting required. The individual should be available at reasonable times of facility operation. Contingency plans should provide adequate management of this section of the airport SWPPP in case of unanticipated absences.

c. **SARA Title III, Section 313 Facilities.** USEPA baseline requirements of the general permit set forth more specific requirements for facilities subject to reporting requirements for water priority chemicals (Part IV.D.7.b.(7)). Consequently, plans should describe when a leak or spill of a Section 313 water priority chemical has occurred and how contaminated soil, materials, or debris are removed promptly and disposed of in accordance with Federal, state, and local requirements. These facilities also require a designated person responsible for spill prevention, response, and reporting procedures.

Equipment to Inspect
Pipes/Pumps Storage tanks and bins Pressure vessels Pressure release valves Process and material handling equipment Storm water management devices (oil/water separators, catch basins, etc.)

Table 12-2. Equipment to inspect

81. **SPILL PREVENTION AND RESPONSE PROCEDURES FOR AIRCRAFT FUELING/DEFUELING ACTIVITIES.** Aircraft fueling (and defueling) operations have the potential to be major sources of storm water pollution. The BOD for aviation kerosene breakdown is considerably higher than that required for deicing/anti-icing fluids. Jet A, A-1, and B are kerosene type distillates compared to aviation gasoline AVGAS 80, 100, and 100LL. Effects of fuel and oil are not as immediate nor apparent as kerosene in storm water although they can be as serious and costly in terms of remediation.

a. **Fire Safety and Spillage.** The fire safety procedures currently practiced by airport authorities may be referenced by the plan to cover fuel spills. Procedures should cover the three main areas of aviation fuel spills: fuel farms, transfer pipelines/pumps, and aircraft fueling/defueling areas. Since fuel spills and releases occur mostly during fueling of aircraft by fuelers, dispensing activities should receive particular attention. The airport SWPPP should also describe measures to prevent or minimize the discharges of fuel to storm water runoff, as well as measures to minimize release of contaminated storm water when a discharge does occur.

b. **Spill Clean Up.** Paragraph 106 of AC 150/5230-4, *Aircraft Fuel Storage, Handling, and Dispensing On Airports*, current edition, provides cleanup practices within the framework of fire safety.

(1) **Small Spills.** Collecting spills can be accomplished using some form of absorbent material, emulsion compounds, or rags. Absorbent materials include sand, sawdust, or specialty textiles. The latter being more effective, absorbing over 10 to 20 times their own weight.

(2) **Large Spills.** Large fuel spills should be blanketed first with foam then dispersed using the washdown techniques within AC 150/5230-4 considerations. Although a fuel dispersant, usually a detergent (surfactant), to emulsify the fuel and dissolve it in water, may aid cleanup, *avoid* washing the dispersant into drains because of fire hazard and added BOD loads. Also, detergents have been known to strip out trapped oil

segregated by used-oil separators and interfere with equipment and pipes at POTWs (publicly owned treatment works). Such potential problems may negate the usefulness of a fuel dispersant. Spilled fuel can be removed using mobile vacuum cleaners (attached to or built into trucks) which siphon fuel spills as well as deicing/anti-icing waste.

c. **Aircraft Fueling/Defueling.** Fixed base operator fueling plans must describe how fuel is dispensed from mobile fuelers or hydrant fuelers (pit/cabinet) boxes. Hydrants with cathodic protection will reduce corrosion and subsequent leaks. Another source of fueling spills may result from faulty aircraft fuel connections.

(1) **Large Airports.** Airports having fuel pits/cabinets can reference 14 CFR Part 139.321 inspection activities in their plans. Scheduled activities may include inspection of gaskets, valves, couplers, etc., and removal of standing fuel.

(2) **General Aviation Airports.** For mobile fueling operations at general aviation airports, an effective BMP is designating specific fueling areas where proper surface drainage and collection reservoirs exist.

d. **Fuel Delivery and Storage.** Self-inspection programs (14 CFR Part 139.327) which cover fuel farm inspections can be referenced in the plan. For inspection of tenant fueling facilities, plans can reference current procedures (14 CFR Part 139.321). AC 150/5230-4 provides some BMP related information on good housekeeping practices, delivering aviation fuel to storage areas, and the dispensing of fuel.

82. **SPILL PREVENTION AND RESPONSE PROCEDURES FOR GROUND VEHICLE FUELING.** To minimize fuel spill contamination, simple BMPs are refraining from topping off vehicle fuel tanks and having sorbent materials available in the fueling area for when small spills occur. Employees should make cleanup a part of their routine. Fueling stations with impervious pavement allow easier cleanup or retention of spills. High volume fueling stations may require installation of diversion drains and/or curbing to minimize storm water contamination by spilled fuel. Section 3.1 of USEPA document 832-R-92-006 provides specific BMPs for ground vehicle fueling stations.

83. **SPILL PREVENTION AND RESPONSE PROCEDURES FOR DEICING/ANTI-ICING ACTIVITIES.** Plans should include practices for dealing with aircraft and pavement deicing/anti-icing runoff and procedures for the handling and storage of such products. Airport authorities performing pavement deicing/anti-icing activities should evaluate their procedures for effectiveness. Airport authorities should require tenants engaged in ground deicing/anti-icing to keep accurate records of glycol usage to aid in reporting requirements (as noted in paragraph 93.a.(2)).

a. **Containment of Aircraft Glycol Runoff.**

(1) **Vacuum Equipment.** One new development in the area of glycol collection has been the advent of "modified vacuum pavement sweepers." These vehicles are equipped with mechanical brooms and a vacuum system to collect deicing/anti-icing fluids as well as any slush or snow in the apron area. The recovered diluted glycol is then transported for proper disposal or treatment. The use of such equipment does present certain issues, for instance, the percentages (strength) of glycol materials recovered and the operational impact and logistics of increased vehicle activity and congestion in deicing areas.

(2) **Publicly Owned Treatment Works (POTW).** The high BOD exerted by the decomposition of glycol runoff is of primary concern to POTWs. Paragraph 96 describes special airport SWPPP requirements imposed on airport authorities by this alternative.

(3) **Detention Basins.** For airports with available physical space, a detention basin(s) is capable of treating "first flush" events during deicing/anti-icing operations. Construction and design standards of basins are generally set by the state or local authority having jurisdiction. Items likely to be required include an impermeable liner to protect the groundwater and monitoring wells to detect breached liners. AC 150/5300-14, *Design of Aircraft Deicing Facilities*, current edition, provides sizing and mechanical aeration considerations. Paragraph 49.c. provides recommended configurations to better control wildlife.

(4) **Underground Storage Tanks (UST).** UST systems that collect ethylene-based glycol fluids are regulated under USEPA UST regulations, i.e., 40 CFR Parts 280 and 281. Regardless of the glycol base, this alternative should be designed in accordance with applicable UST regulations since it may collect a regulated substance such as aviation fuel.

(5) **Recycling Glycol Fluids.** Depending on the nature of the runoff and economics, technologies are available for recycling spent glycol fluids collected at concentrations of seven to ten percent. In terms of recycling fluid types, type II fluids may be more

expensive to recycle because of higher concentration levels of special additives. Prior to using recycled glycols on aircraft, recertification of the recycled glycol in accordance with established industry standards is necessary. For pavement applications, recycled glycol needs to meet the pavement fluid specification in AC 150/5200-30.

b. **Pavement BMPs.** The following are recommended BMP measures.

(1) **Training.** Routine training of employees should be conducted to emphasize efficient application and proper handling of deicing/anti-icing products.

(2) **Pavement Sensors.** In-pavement and vehicle-attached sensors are available to determine the surface temperature of pavements. This information allows for better timing of application of deicing/anti-icing materials as the pavement approachs the freezing point. In-pavement sensors also notify employees when the effectiveness of applied chemicals has decreased to the point where additional application is needed. AC 150/5220-13, *Runway Surface Condition Sensor Specification Guide*, current edition, provides guidance on pavement sensor systems.

(3) **Pavement Anti-icing versus Deicing.** Anti-icing instead of deicing, when practicable, reduces the usage rate.

84. **MATERIAL SUBSTITUTION.** Environmentally friendlier products should be used whenever practical. For example, phosphate-free detergents for washing vehicles can be substitutes for solvents in cleaning up oil-based spills. Natural products for absorbing fuel spills and different chemically-based runway deicer/anti-icers (AC 150/5200-30) are also available.

85. **AIRCRAFT, GROUND VEHICLE, AND EQUIPMENT WASH WATER.** USEPA considers wash water as a process waste water discharge which requires disposal to sanitary sewers or some degree of pretreatment prior to release. Oil, grease, metals, and emulsified wastes are common ingredients found in aircraft and vehicle wash water waste.

a. **SWPPP Requirements.** Airport SWPPPs should describe measures which prevent or minimize the contamination of the storm water runoff from all areas used to clean aircraft, ground vehicles, and other equipment. Cleaning areas should be delineated on the facility site map.

b. **BMPs.** One activity-based BMP is designating washing areas which direct wash water waste to sanitary sewers or collect it for pretreatment. Substituting phosphate-free detergents can simplify pretreatment. When large quantities of wash water are discharged, it may be necessary to use specific pretreatments.

(1) **Aircraft Washes.** Chapter 11 discusses collection and treatment of large quantities of wash water from aircraft wash racks by an air flotation system. This is one option for activities that contribute large quantities of oil, grease, and emulsified wastes.

(2) **Ground Vehicle and Equipment Washes.** USEPA provides activity-specific BMPs for vehicle and equipment wash waters in section 3.4 of EPA 832-R-92-006.

86. **AIRCRAFT, GROUND VEHICLE, AND EQUIPMENT MAINTENANCE AREAS.** SWPPPs should describe measures which prevent or minimize the contamination of the storm water runoff from all areas used to store aircraft, ground vehicles, and equipment awaiting maintenance. Designated maintenance areas should be delineated on the facility site map.

a. **Aircraft Maintenance.** The operations conducted at aircraft maintenance shops include cleaning, reconditioning, and overhauling. The principal wastes are metal cleaning, treating, and plating solutions. Plating room waste consists of acids, cyanide, and heavy metals such as zinc, copper, lead, and chromium. Engine repairs and test cells generate alkaline cleaner waste, oil, grease, and emulsified materials. Chapter 10 provides some specific BMP pretreatments for plating waste reduction, chromic acid recovery, chromium reduction, phenolic waste treatments, and cyanide wastes treatments.

b. **Ground Vehicle and Equipment.** USEPA provides activity-specific BMPs for vehicle and equipment maintenance wastes in section 3.2 of EPA 832-R-92-006.

87. **LOADING/UNLOADING DOCKS AND STORAGE AREAS.** Plans should describe measures which prevent or minimize the contamination of the storm water runoff from loading/unloading receiving docks and material storage areas. These areas should be delineated on the facility site map. Because of the nature of these operations, both activity and structural BMPs may be necessary.

a. **Activity-Based BMPs.** Activity-specific BMPs should be implemented to improve the processing of deliverables at loading/unloading receiving docks and their subsequent storage at the site. A daily cleanup, sweeping to remove trash, etc., and/or responding to

spills lessens the amount of material exposed to storm water runoff by wind or precipitation. Containing spills is one of the primary methods of minimizing exposure of contaminants to storm water runoff. Employees should have cleanup materials, such as sorbents or gelling agents, available for cleanup. Section 4.3 of USEPA document 832-R-92-006 discusses the advantages, disadvantages, and what to consider before implementing sweeping, sorbents, and gelling agents.

b. **Structural-Based BMPs.** Structural BMPs to minimize or separate storm water originating at receiving docks include drip pans, catch basins, sump pumps, containment diking, and curbing. Section 4.2 of USEPA document 832-R-92-006 discusses the advantages, disadvantages, and what to consider before implementing these alternatives.

88. **SOIL EROSION AND SEDIMENTATION CONTROLS.** Severe weather, airfield operations, and construction activities can accelerate soil erosion and subsequent sedimentation. Sedimentation occurs when loose soil particles are suspended in surface runoff or wind and are deposited in streams and other bodies of water.

a. **Control Measures.** Plans should identify areas which have potential for significant soil erosion and the soil stabilization or structural measures implemented to limit such problems. The optimum BMPs for sediment and erosion prevention depend upon site conditions, such as topography, soil type, climate, and the nature of airport activities, such as degree of construction and type of airfield operation. All BMPs, prior to implementation, should be reviewed for (1) consistancy with AC 150/5300-13, *Airport Design*, current edition, such as, runway safety area standards, and (2) wildlife mitigation measures.

b. **Construction Activities.** Construction activities have the potential for severe damage to water quality because of high sediment loads. Besides soil erosion, changes to drainage patterns, and loss of vegetation, construction can contribute pollutants, such as lubricants, bitumens, phosphorous, nitrogen, and solid wastes. Staged construction activities may need to schedule specific BMPs, such as controlling wash water or waste flows during concrete mixing or curing operations.

(1) **Less than Five Acres.** Construction activities on sites of less than five acres can be addressed by the airport SWPPP developed for industrial activities which differs from SWPPPs developed for construction activities. BMP guidance is available from AC 150/5370-10, AC 150/5320-5, *Airport Drainage*, current edition, and Chapter 3 of USEPA publication EPA 832-R-92-005.

(2) **Five Acres or More.** Construction activities on sites of five acres or more should be addressed by a separate SWPPP for construction activities. For this case, USEPA document EPA 832-R-92-005, *Storm Water Management For Construction Activities: Developing Pollution Prevention Plans and Best Management Practices*, provides guidance on how to develop construction activity plans.

c. **Airfield Activities.** Plans may need to address certain airfield activities that contribute to soil erosion and sediment loads in receiving bodies of water. Potential activities include the following:

(1) **Emergency Response Drills.** Readiness drills to evaluate Airport Emergency Plans (14 CFR Part 139.325) conducted off paved areas may cause localized turf damage requiring post-exercise remediation.

(2) **Removal of Disabled Aircraft.**

d. **Jet Blast.** AC 150/5300-13 provides shoulder stabilization practices and blast pad design recommendations to reduce soil erosion. See paragraph 78.c. for related guidance on turf management.

e. **Preventive Practices.** Structural BMPs for erosion protection include vegetation, flow dispersion, swales, slope reduction, dikes/berms, sedimentation traps, diversion structures, curbing, rip rap, and culverts.

USEPA provides numerous sediment and erosion prevention and control measures in Chapter 4 of their publication EPA 832-R-92-006.

SECTION 4. PLAN IMPLEMENTATION (PHASE 4)

89. **INTRODUCTION.** Permits require schedules to implement selected BMPs. As previously noted, this is one of the responsibilities of team members. Their knowledge of the day-to-day operations of regulated facilities and activities and how they interrelate with the selected BMPs will normally yield realistic and

achievable schedules. Table 12-5 provides implementation deadlines for the general permit. Worksheet No. 8 provides a means to list implementation schedules.

90. **EMPLOYEE TRAINING PROGRAMS.** SWPPPs should include employee training programs which address pollution prevention. This will inform employees at all levels of responsibility (including tenants) of the components and goals described in the airport SWPPP. The frequency should take into account the complexity of the management practices, staff turnover, and employee workloads (multiple duties). Worksheet No. 9 provides a means to organize employee training topics and schedules.

a. **Employee Training Programs.**

(1) **SWPPP Components and Goals.** Each plan component and goal should address the "how" and "why" tasks that are to be implemented. This conveys to the employees understanding of potential pollutant problems and how their involvement directly affects the effectiveness of the plan.

(2) **Training Topics.** At a minimum, training should address the major topics contained in the plan, such as spill prevention and response, good housekeeping, and material management practices. Given the chemical characteristics for certain spilled chemicals, training should address relevant OSHA training requirements for employees responding to spills. Teaching strategies may focus on how employees can prevent spills, respond safely and effectively to an accidental spill, and recognize potential situations which could lead to storm water contamination. Specialized training programs may also be implemented to cover specific topics, such as runway deicing/anti-icing applications and followup cleanup procedures.

b. **Special SARA Title III, Section 313 Training Programs.** For airport or tenant facilities reporting under section 313, the baseline general permit specifies training requirements for employees and contractor personnel that work in areas where SARA Title III, Section 313 water priority chemicals are used or stored (see general permit Part IV.D.7.b.(9)). Criteria for regulated chemical categories can be found in 40 CFR Part 116.440, Appendix D of Part 122, and Part 372.65. These employees should be trained at least once per year in the following areas:

(1) Preventative measures, including spill prevention and response and preventive maintenance,

(2) Pollution control laws and regulations,

(3) Goals and objectives of the facility's plan, and

(4) Features and operations of the facility which are designed to minimize discharges of Section 313 water priority chemicals, particularly spill prevention procedures.

SECTION 5. EVALUATION (PHASE 5)

91. **INTRODUCTION.** Permits require the evaluation of the effectiveness of the BMPs implemented to prevent or control identified pollutant sources. Inspection records provide the airport authority (the permittee) the documentation that management procedures are in place and, when necessary, what corrective actions were taken. The extent of evaluation will depend on the permit and the contents of the plan. At a minimum, airport authorities should conduct site evaluations and retain records of all inspections and reports. Scheduled evaluations may warrant revisions of plans to provide more effective BMPs or addition and/or deletion of BMPs for new and/or discontinued activities which can generate pollutants.

a. **Monitoring Timetables.** Monitoring permitted facilities and activities for compliance varies according to the negotiated permit.

b. **Compliance Evaluation.** Plans should identify qualified employees responsible for conducting site compliance evaluations at the scheduled intervals. These employees, as frequently as specified in the permit but at least annually, must perform the following:

(1) Visually inspect storm water drainage areas, particularly those regulated areas associated with industrial activity, for evidence of pollutants entering the drainage system;

(2) Look for changes in physical site conditions, onsite activities, and material handling and storage practices;

(3) Evaluate the effectiveness of implemented BMP measures to reduce pollutant loadings and whether additional control measures are needed;

(4) Observe structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures to ensure proper operation (e.g., determine maintenance of structural measures); and

(5) Inspect any equipment needed to implement the plan, such as spill response equipment.

c. **Deadlines for Revising SWPPPs.** Based on the results of the compliance inspection, the plan should be revised as appropriate within two weeks of the inspection and should provide implementation of any necessary changes to the plan (measures and controls) in a timely manner, but at least within 12 weeks of the inspection.

d. **Compliance Inspection Report.** Plans should retain compliance inspection reports for at least one year after the permit expires. The report should include inspection results and follow up actions, the date of inspection and the qualified employee who conducted the inspection, and any incidents of noncompliance or a signed certification that the facility is in compliance with the plan and the permit. All incidents of noncompliance should be documented in the compliance inspection report. Where there are no incidents of noncompliance, the inspection report should contain a certification that the facility is in compliance with the plan. The signed report should be in accordance with the general permit, Part VII.G. and kept with the SWPPP.

e. **Scope of Site Compliance Evaluation.** The scope of the site compliance evaluation depends on various factors, including the scope of the plan and the size of the airport. As each airport's SWPPP is unique, the exact inspection format will vary. One approach follows:

(1) Review the plan and draw up a list of those areas which are included in the storm water discharge permit;

(2) List all equipment, containment, and storm water pollution prevention measures (BMPs) in these areas covered in the plan;

(3) Review facility operations (activities) for the past year to determine if any new areas should be included in the original SWPPP, or if any areas were modified so as to require plan modifications; change the plan as necessary;

(4) Conduct inspections to determine if all storm water pollution prevention measures (BMPs) are accurately identified in the plan and that they are in place and working properly;

(5) Document findings; and

(6) Modify the airport SWPPP as necessary.

f. **Availability of Documentation.** All documentation regarding conditions necessitating modification to the plan should be kept on file as part of the airport SWPPP for one year after the permit expires.

92. **VISUAL INSPECTIONS.** Regular visual inspections should be performed in addition to or as part of the comprehensive site evaluation required under Part IV.4. of the general permit. These are not comprehensive evaluations of the SWPPP program. Rather, they are a routine examination of facilities and activities to identify potentially contaminating conditions. Conducting inspections after significant storm events can identify necessary changes of a BMP more quickly to assure adherence to the negotiated SWPPP. Results of all inspections should be tracked to implement more effective actions when necessary, and records should be maintained.

a. **Visual Inspection Plan.** Avoid complicated and labor intensive procedures. Determine what areas of the facility could potentially contribute pollutants to storm water runoff and devise and implement a visual inspection program based on this information. To a large degree, the usefulness of any visual inspection plan rests with the inspecting employees.

b. **Qualified Employee.** Inspections should be performed by qualified employees who will inspect equipment and areas of concern at scheduled intervals. Qualified employees are properly trained, familiar with the objectives of the airport SWPPP program, and use proper record keeping and reporting procedures. The frequency of inspections will depend on the types and amounts of materials handled at a facility, implemented BMPs, and other relevant factors. For example, older equipment as compared to newer equipment should be inspected at more frequent intervals. Tables 12-3 and 12-4 are provided as starting points.

93. **RECORDKEEPING AND INTERNAL REPORTING.** Permits require keeping updated, accurate records and related documents with the airport SWPPP. Besides including inspection and maintenance activity records, incident reports (such as spills or other discharges) along with other pertinent information describing the quality and quantity of storm water discharges should also be included with the plan.

Records should note date of inspection, who conducted the inspection, areas inspected, type of problems found, corrective steps, and who was notified (including Federal, state, or local authorities).

a. **Recording Items**. Records should include, if practicable, the following actions:

(1) The date and time of the incident, weather conditions, duration, cause, environmental problems, response procedures, parties notified, recommended revisions to the BMP program, operating procedures, and/or equipment needed to prevent recurrence.

(2) The airport authority may report all the airport deicing and anti-icing operations that occurred in a 24-hour period as an aggregate release. This report should include the date, type of deicing chemical, estimated quantity released, and a description of the conditions causing the release. Worksheet No. 10 provides an example format. Information probably will be needed for quantities used by airlines and other tenants.

Areas to Inspect
Areas around equipment listed in Preventive Maintenance box
Areas where spills and leaks have occurred in the past
Material storage areas (tank farms, drum storage)
Outdoor material processing areas
Material handling areas (e.g., loading, unloading, transfer areas)
Waste generation, storage, treatment and disposal areas

Table 12-3. Areas to inspect

Visual Inspection Checklist Do you see:
Corroded drums or drums without plugs or covers?
Corroded or damaged tanks, tank supports, or tank drain valves?
Torn bags or bags exposed to rain water?
Corroded or leaking pipes?
Leaking or improperly closed valves and valve fittings?
Leaking pumps and/or hose connections?
Broken or cracked dikes, walls, or other physical barriers designed to prevent storm water from reaching stored materials?
Windblown dry chemicals?
Improperly maintained dry chemical conveying systems?

Table 12-4. Visual Inspection Checklist

(3) Formal written reports are helpful in reviewing and evaluating the discharges and making revisions for more effective BMPs. Document all calls and reports to the National Response Center in the event of a reportable quantity discharge. 40 CFR Part 117 and 40 CFR Part 302 provide more information on reporting spills or other discharges.

(4) A list of the procedures for notifying the appropriate airport employee, as well as the names and telephone numbers of responsible employees, enables more rapid reporting of releases and responding to spills and other incidents.

b. **Duration of Records**. Records of spills, leaks, or other discharges, inspections, and maintenance activities should be retained for at least one year after the permit expires.

94. **REVISION OF SWPPPS**. Airport authorities should expect to revise plans to reflect changes, such as new airport construction, modified activities, or maintenance procedures. Other revisions may result from eliminating BMPs which prove ineffective in preventing or controlling the discharge of pollutants.

a. **Team Member Responsibilities.** When changes are necessary, the pollution prevention team should discuss alternative BMPs, perform cost/benefit analysis of the alternative BMPs, develop implementation schedules, and modify the airport SWPPP accordingly.

b. **Modified Notifications**. Airport authorities are not required to submit a notice to the Director (permitting authority) each time the airport SWPPP is modified if the airport (or tenant) initiates the modification process. In contrast, if the Director notifies the airport authority (or tenant) that certain changes are required, then notification of the modification is required.

SECTION 6. SPECIAL SWPPP REQUIREMENTS

95. **INTRODUCTION**. Authorities of airports that: 1) discharge storm water through large or medium municipal separate storm sewer systems; 2) have facilities on airport property subject to SARA Title III, Section 313 reporting requirements; or 3) stockpile salt for nonaeronautic uses that has the potential to contaminate storm water runoff entering a body of water, will need to include up to three additional special requirements beyond the baseline BMPs cited in sections 1, 2, and 3.

96. **SPECIAL REQUIREMENTS FOR DISCHARGES THROUGH LARGE AND MEDIUM MUNICIPAL SEPARATE STORM SEWER SYSTEMS**. The November 16, 1990, storm water discharge permit regulations require large and medium municipal separate storm sewer systems serving a population of 100,000 or more to develop storm water management programs in order to control pollutants discharged through their municipal systems. Airports covered by general permits will typically be required to submit a copy of their Notice of Intent (NOI) to the municipal operator.

a. **Responsibility of the Airport Authority**. USEPA emphasizes that it is the responsibility of the airport authority to inform the municipal authority of all storm water discharges associated with industrial activity to the separate storm sewer system. This includes nonstorm water discharge activities, such as washwater from aircraft, vehicles, or equipment, and dry weather chemical discharges from aircraft deicing/anti-icing operations and runway maintenance. The airport authority should comply with:

(1) conditions in municipal storm water management programs developed under the NPDES permit issued to the storm sewer system into which the airport discharges, provided that the airport authority was directly notified of the requirements by the municipal operator.

(2) deadlines specified in the airport SWPPP as listed in table 12-5.

b. **Additional Special Requirements**. In some situations, the municipal operator may find it necessary to impose additional special requirements on the airport's SWPPP or a tenant's SWPPP because of the class of industrial facilities or a particular industrial activity. For example, runoff from aircraft deicing/anti-icing activities may require pretreatment. AC 150/5300-14 lists probable pretreatment parameters. One way the municipal operator can ensure the airport authority (or a tenant) complies with the special requirements is to include a provision in the NPDES storm water discharge permit that directly requires compliance. This mechanism provides a basis for enforcement action to be directed, when necessary, against the airport authority or tenant of the facility with a storm water discharge associated with an identified industrial activity.

USEPA GENERAL PERMIT REQUIREMENTS		
Schedule for Plan Development and Implementation Part IV.A.		
Facility Startup Date	Deadline for Plan Completion	Deadline for Plan Implementation
Industrial activity on or after January 1, 1993	48 hours prior to commencement of discharge (upon submittal of NOI)	48 hours prior to commencement of discharge (upon submittal of NOI)

Table 12-5. USEPA general permit requirements

97. **SPECIAL REQUIREMENTS FOR SARA TITLE III, SECTION 313 REPORTING FACILITIES.** Section 313 of SARA requires operators of facilities that handle toxic chemicals in amounts exceeding threshold levels (in accordance with 40 CFR Part 372.25) to report to the Federal Government on an annual basis. Because these types of facilities can handle certain amounts of toxic chemicals, USEPA concluded that they have an increased potential to degrade the water quality of receiving bodies of water.

a. **Contributing Activities.** Examples of contributing activities include cleaning, reconditioning, plating, and overhauling at aircraft maintenance facilities. Plating wastes, which are mainly inorganic, consist of acids, cyanide, and heavy metals such as zinc, copper, lead, and chromium. Reportable cyanide, chromium, and other wastes can be generated during metal rust prevention and stain removal. Concentrated phenol (heavy metal) wastes resulting from the cleaning of aircraft parts is another example. Chapters 8 and 10 provide waste management guidance for airport and aircraft maintenance shop waste.

b. **Specific Requirements.** To address the risk, specific preventive or control requirements in the general permit focus on the storing, handling, and transferring of the Section 313 water priority chemicals (over 200 chemicals) identified as especially toxic to water ecosystems. Table 12-6, which focuses on these toxic chemicals, may be included in SWPPPs of regulated facilities. These actions should help to prevent spills and leaks of water priority chemicals and eliminate or reduce other opportunities for exposure of toxic chemicals to storm water, thus protecting receiving streams from toxic discharges.

98. **SPECIAL REQUIREMENTS FOR SALT STORAGE PILES.** Airports that stockpile salt to deice nonaeronautical operational areas, such as public parking lots or sidewalks, should include in their plan practices which protect the salt stockpile(s) from precipitation. Permits require stockpiles to be either covered or enclosed to prevent exposure to precipitation (except when salt is being added to or taken from the pile) if storm water from a salt stockpile discharges into a receiving body of water. For exterior storage, an inexpensive BMP is the covering of salt piles with tarpaulins or other coverings. AC 150/5220-18 provides guidance on interior storage.

SECTION 7. GENERAL ADMINISTRATIVE REQUIREMENTS

99. **INTRODUCTION.** Permits require four general administrative requirements: (1) compliance and implementation deadlines, (2) required signatures and certifications, (3) availability of the SWPPP for public access, and (4) USEPA required modifications.

100. **COMPLIANCE DEADLINES.** Table 12-5 provides deadlines to develop and implement airport SWPPPs on the basis of when an airport or tenant facility commences regulated industrial activities. Deadlines to complete and comply with or implement a SWPPP (or tenant plan) may depend on two factors: (1) the permit, i.e., general permit under which the airport or tenant facility or activity is covered and, (2) the permitting authority, e.g., Federal or authorized state. Airport authorities should read the permit carefully to determine the deadlines, especially since an authorized state may issue general permits having deadlines different than shown in table 12-5.

1. Provide containment, drainage control, and/or diversionary structures: - Prevent or minimize contact with storm water by installing curbing, culverts, gutters, sewers, or other controls, and/or - Prevent or minimize exposure by covering storage piles.
2. Prevent discharges from all areas: - Use manually activated valves with drainage controls in all areas, and/or - Equip the areas with a drainage system to detain/retain or treat water priority chemicals.
3. Prevent discharges from liquid storage areas: - Store liquid materials in compatible storage containers - Provide secondary containment designed to hold the volume of the largest storage tank plus precipitation.
4. Prevent discharges from loading/unloading areas: - Use drip pans and/or - Implement a strong spill contingency and integrity testing plan.
5. Prevent discharges from handling/processing/transferring areas: - Use covers, guards, overhangs, door skirts - Conduct visual inspections or leak tests for overhead piping.
6. Introduce facility security programs to prevent spills: - Use fencing, lighting, traffic control, and/or secure equipment and buildings.

Table 12-6. Specific Section 313 Facility Controls

101. **REQUIRED SIGNATURES.** Part VII.G.1 of the general permit requires signatures on all reports, certifications, or information submitted to the permitting authority, submitted to the operator of a large or medium municipal separate storm sewer system, or required to be maintained by the permittee on site. Signature authority falls in one of the following three categories:

a. **For a Federal, state, municipality, or other public agency**, the plan should be signed by either the principal executive officer or ranking official, which includes the chief executive officer of the agency, or the senior officer having responsibility for the overall operations of a principal geographic unit of the agency.

b. **For a corporation**, the SWPPP should be signed by a "responsible corporate officer." A responsible corporate officer may be any of the following:

(1) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.

(2) The authority of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25,000,000 (in second quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedure.

c. **For a partnership or sole proprietorship**, the SWPPP should be signed by a general partner or the proprietor.

102. **DESIGNATING SIGNATORY AUTHORITY.** Any of the above persons may designate a duly authorized representative to sign for them. The representative should have overall responsibility for the operation of the regulated facility or environmental matters for the airport authority or tenant. If an authorized representative is appointed, the authorization

should be put in writing by the responsible signatory and submitted to the Director (permitting authority). Any change in authorized representative or an authorized position should be made in writing and submitted to the permitting authority.

103. **CERTIFICATION STATEMENT REQUIREMENT.** To ensure that the airport SWPPP is completely developed and adequately implemented, NPDES permits generally require that an authorized representative sign and certify the plan. The authorized representative should be someone at or near the top of the airport management chain, such as the Director of Operations, Deputy Administrator, or an airport staff manager who has been delegated the authority to sign and certify this type of document.

a. **Signee Responsibilities.** In signing the plan, the signee is attesting that the information is true. This signature provides a basis for an enforcement action to be taken against the person signing a plan and related reports. The permittee should be aware that Section 309 of the CWA provides for significant penalties where information is false or the permittee violates, either knowingly or negligently, permit requirements. In some cases, permits may require certification of the SWPPP by a registered professional engineer. Specific signatory requirements will be listed in the NPDES permit.

b. **Certification Statement.** Any person signing documents under this section will make the following certification:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."* (Part VII.G.2.d)

104. **SARA TITLE III, SECTION 313 FACILITY PLAN CERTIFICATION REQUIREMENTS.** The baseline requirements of the general permit contain additional certification requirements for airport or tenant facilities subject to reporting under SARA Title III, Section 313 for water priority chemicals (Part IV.D.7.b.(10)). The plan should be reviewed and certified by a registered professional engineer and recertified every three years or after the plan is significantly revised. This certification that the airport plan was prepared in accordance with good engineering practices does not relieve the airport authority, as permittee, of the responsibility to prepare and implement the plan.

105. **AVAILABILITY OF SWPPPS FOR PUBLIC ACCESS.** Airport SWPPPs should be maintained on site. The USEPA Director, authorized representative, or the operator of a large or medium municipal separate storm sewer system may request that the plan be submitted to his or her office. It is advisable, therefore, to have extra copies available. Plans and all required records should be kept at least one year after the permit expires. Plans and associated records are considered to be "reports" pursuant to Section 308(b) of the CWA, and therefore, are available to the public when these documents have been submitted to the Director (permitting authority).

106. **USEPA DIRECTOR REQUIRED SWPPP MODIFICATIONS.** Airport authorities should be aware that, occasionally, plans are requested to be submitted for review to improve them, such as in areas of spill response procedures. Any changes required by the permitting authority shall be made within 30 days, unless otherwise provided by notification, and the facility must submit a certification signed in accordance with the general permit, Part VII.G., to the Director (permitting authority) that the requested changes have been made.

APPENDIX 3. WORKSHEETS FOR STORM WATER POLLUTION PREVENTION PLANS

POLLUTION PREVENTION TEAM MEMBER ROSTER	**Worksheet #1** **Completed by:** _____ **Title:** _____ **Date:** _____

Leader: _____ **Title:** _____

Office Phone: _____

Responsibilities:

_____

_____

_____

Members:

(1) _____ **Title:** _____

Office Phone: _____

Responsibilities:

_____

_____

_____

(2) _____ **Title:** _____

Office Phone: _____

Responsibilities:

_____

_____

_____

(3) _____ **Title:** _____

Office Phone: _____

Responsibilities:

_____

_____

_____

DEVELOPING A SITE MAP	**Worksheet #2** **Completed by:** _____ **Title:** _____ **Date:** _____

Directions: Draw a map of your site including aircraft maneuvering areas, and a footprint of all buildings, structures, paved areas, and parking lots. The information below describes additional elements required by USEPA's General Permit.

USEPA's General Permit requires that you indicate the following features on your site map:

- All outfalls and storm water discharges
- Drainage areas of each storm water outfall
- Structural storm water pollution control measures, such as:
  - Flow diversion structures
  - Retention/detention ponds
  - Vegetative swales
  - Sediment traps
- Name of receiving waters (or if through a Municipal Separate Storm Sewer System)
- Locations of exposed significant materials
- Locations of past spills and leaks
- Locations of high-risk, waste generating areas and activities common on industrial sites such as:
  - Fueling areas, fuel farms, stations, and underground systems
  - Aircraft, pavement deicing/anti-icing areas
  - Aircraft/vehicle/equipment washing and maintenance areas
  - Area for unloading/loading materials
  - Above ground tanks for liquid storage, such as glycol
  - Industrial waste management areas (waste piles, treatment plants, disposal areas)
  - Outside storage areas for raw materials, by-products, and finished products
  - Outside aircraft serving areas
  - Other areas of concern (specify): _____

MATERIAL INVENTORY

Worksheet #3
Completed by: _____
Title: _____
Date: _____

Directions: **List all materials used, stored, or produced on site. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A if the material has been exposed during the last 3 years.**

Material	Purpose/Location	Quantity (units)			Quantity Exposed in Last 3 Years	Likelihood of contact with storm water. If yes, describe reason.	Past Significant Spill or Leak	
		Used	Produced	Stored			Yes	No

DESCRIPTION OF EXPOSED SIGNIFICANT MATERIAL	**Worksheet #3A** **Completed by:** _____ **Title:** _____ **Date:** _____

Directions: Based on your material inventory, describe the significant materials that were exposed to storm water during the past three years and/or are currently exposed. For the definition of "significant materials" see paragraph 72.

Description of Exposed Significant Material	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of Storage or Disposal (e.g., pile, drum, tank)	Description of Material Management Practice (e.g., pile, covered, drum sealed)

LIST OF SIGNIFICANT SPILLS AND LEAKS

Worksheet #4
Completed by: _____
Title: _____
Date: _____

Directions: **Record below all significant spills and significant leaks of toxic or hazardous pollutants that have occurred at the facility in the three years prior to the effective date of the permit.**

Definitions: **Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of reportable quantities.**

1st Year Prior

Date (month/day/ year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	

2nd Year Prior

Date (month/day/ year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	

3rd Year Prior

Date (month/day/ year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	

NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION			Worksheet #5 Completed by: _____ Title: _____ Date: _____		
Date of Test or Evaluation	Outfall Directly Observed During the Test (Identify as indicated on the site map)	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Identify Potential Significant Sources	Name of Person Who Conducted the Test or Evaluation

CERTIFICATION

I, _____ (responsible corporate official), certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel property gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title (type or print)	B. Area Code and Telephone No.
C. Signature	D. Date Signed

NON-STORM WATER DISCHARGE ASSESSMENT AND FAILURE TO CERTIFY NOTIFICATION

Worksheet #6
Completed by: _____
Title: _____
Date: _____

Directions: If you cannot feasibly test or evaluate an outfall, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.

List all outfalls not tested or evaluated, describe any potential sources of non-storm water pollution from listed outfalls, and state the reason(s) why certification is not possible. Use the key from you site map to identify each outfall.

Importance Notice: A copy of this notification must be signed and submitted to the Director within 180 days of the effective date of this permit.

Identify Outfall Not Tested/Evaluated	Description of Why Certification is Infeasible	Description of Potential Sources of Non-Storm Water Pollution

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations, and that such notification has been made to the Director (issuing authority) within 180 days of _ ___ (date permit was issued), the effective date of this permit.

A. Name & Official Title (type or print)	B. Area Code and Telephone No.
B. Signature	D. Date Signed

POLLUTANT SOURCE IDENTIFICATION	Worksheet #7 Completed by: _____ Title: _____ Date: _____

Directions: List all identified storm water pollutant sources and describe existing management practices that address those sources. In the third column, list BMP options that can be incorporated into the plan to address remaining sources of pollutants.

Storm Water Pollutant Sources	Existing Management Practices	Description of New BMP Options
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

BMP IDENTIFICATION	Worksheet #7A Completed by: _____ Title: _____ Date: _____

Directions: **Describe the Best Management Practices that you have selected to include in your plan. For each of the baseline BMPs, describe actions that will be incorporated into the airport or facility operations. Also describe any additional BMPs that you have selected. Attach additional sheets if necessary.**

BMPs	Brief Description of Activities
Good Housekeeping	
Preventative Maintenance	
Inspections	
Spill Prevention & Response	
Sediment and Erosion Control	
Management of Runoff	
Additional BMPs (Activity-specific and Site-specific)	

IMPLEMENTATION	Worksheet #8 Completed by: _____ Title: _____ Date: _____

Directions: **Develop a schedule for implementing each BMP. Provide a brief description of each BMP, the steps necessary to implement the BMP (i.e., any design or construction), the schedule for completing those steps (list dates) and the person(s) responsible for implementation. Attach additional sheets if necessary.**

BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Actions	Person Responsible for Action(s)	Notes
Good Housekeeping	1.			
	2.			
	3.			
Preventative Maintenance	1.			
	2.			
	3.			
Inspections	1.			
	2.			
	3.			
Spill Prevention & Response	1.			
	2.			
	3.			
Sediment and Erosion Control	1.			
	2.			
	3.			
Management of Runoff	1.			
	2.			
	3.			
Additional BMPs (Activity-specific and Site-specific)	1.			
	2.			
	3.			

EMPLOYEE TRAINING	Worksheet #9. Completed by: Title: Date:

Directions: **Describe the employee training program for each facility or specific activity. At a minimum the program should, if topics apply, address good housekeeping, spill prevention and response, and material management practices. Provide a schedule for the training program and the roster ID number that lists the employees who attended the training sessions. Attach additional sheets if necessary.**

Training Topics	Brief Description of Training Program and Materials (e.g., posters, newsletters, course, films)	Scheduled for Training (list dates)	Roster ID Number
Good Housekeeping	1.		
	2.		
	3.		
Spill Prevention & Response	1.		
	2.		
	3.		
Material Management Practices	1.		
	2.		
	3.		
Other Topics	1.		
	2.		
	3.		
	1		
	2.		
	3.		
	1.		
	2.		
	3.		

PAVEMENT DEICING/ANTI-ICING RELEASES	Worksheet No. #10 Completed by: Title: Date:

Directions: **Record the releases of pavement deicing/anti-icing chemicals as an aggregate of all deicing/anti-icing operations that occur during a 24 hour period. Attach additional sheets if necessary. (Information still needed for quantities used by airlines and other tenants).**

Date (Event Number#)	Location (rwy/twy/apron)	Type of Deicing/Anti-icing Product (by tradename)	Estimated Quantity (gallons)	Estimated Quantity (tons)	Comments
	1.				
	2.				
	3.				
	1.				
	2.				
	3.				
	1.				
	2.				
	3.				
	1.				
	2.				
	3.				
	1				
	2.				
	3.				
	1.				
	2.				
	3.				

APPENDIX 4. SAMPLE OF AN AIRPORT SWPPP

1. **SWPPP SAMPLE.** This sample shows how information for a SWPPP may be organized. The SWPPP is developed for the entire site and it includes, in appendix 5, an attached supplemental plan of an airport tenant metal plating industry located on the property. This sample assumes that the airport authority and the tenant share a drainage area (outfall no. 6) and are co-permittees. The sample is designed as an active document that is easily updated. Updated information typically includes revisions to the exposed material inventory, inspection reports, implementation and training schedules, and SWPPP revisions.

STORM WATER POLLUTION PREVENTION PLAN

COUNTY AIRPORT

100 Airline Drive
Silverton City, Texas
December 1994

Emergency Contact: Bethel Burson
Title: Airport Manager
Phone: 904-267-8766

I. PLANNING AND ORGANIZATION

A. **Member Roster** (worksheet No. 1)

B. **Consistency with Other Plans**

II. SITE ASSESSMENT

A. **Site Map** (worksheet No. 2)

B. **Inventory of Materials.**

1. **Description of Exposed Materials** (worksheet No. 3)

2. **Description of Exposed Significant Materials** (worksheet No. 3A)

C. **Past Spills and Leaks** (worksheet No. 4)

D. **Non-storm Water Discharges** (worksheet No. 5)

E. **Non-storm Water Discharges - Failure to Certify** (worksheet No. 6)

F. **Storm Water Sampling Data**

1. **Sampling Records**

2. **Alternative Certification**

G. **Risk Identification and Potential Pollutant Sources**

1. **Pollutant Source Summary** (worksheet No. 7)

2. **Site Assessment Report**

III. PLAN DESIGN - BMP SELECTION

A. **Baseline BMP Narrative Summary** (worksheet No. 7A)

1. **Good Housekeeping**

2. **Preventive Maintenance**

3. **Visual Inspections**

4. **Spill Prevention and Response**

5. **Sediment and Erosion Control**

6. **Management of Runoff**

B. **Activity Specific BMPs**

1. **Vehicle Fueling Areas.**
2. **Vehicle Sump Fuel Storage Areas.**
3. **Deicing/anti-icing.**
4. **Oil Barrel Storage Areas.**
5. **Aircraft Exterior Cleaning Activities.**

IV. IMPLEMENTATION SCHEDULE

A. **BMP Schedule Summary** (worksheet No. 8)

B. **Employee Training Schedules** (worksheet No. 9)

V. SWPPP EVALUATION

A. **Annual Compliance Evaluation Reports**

B. **Inspection and Maintenance Reports**

C. **Plan Revisions**

VI. GENERAL REQUIREMENTS

A. **Required Signatures**

B. **Plan Location and Public Access**

C. **USEPA Director Required Plan Modification**

VII. SPECIAL REQUIREMENTS

A. **Discharges Through a Municipal Separate Storm Water System (MS4)**

B. **Discharges From Facilities Subject to Reporting Under EPCRA Section 313**

ATTACHMENT No. 1: NPDES General Permit for Storm Water Discharges Associated with Industry Activities. The SWPPP does not require an attached copy of the permit (omitted for this sample).

ATTACHMENT No. 2: Special Requirements for Metalplate,Inc. (a fictitious corporation), an EPCRA Section 313 Facility (see appendix 5).

I. PLANNING AND ORGANIZATION

A. **Member Roster.** See attached worksheet No. 1 for pollution prevention plan team members.

B. **Consistency with Other Plans.**

The county airport has a Spill Prevention Control and Countermeasure Plan (SPCC) and a Foul Weather Procedures Plan (FWPP) in place. The airport tenant, Metalplate, Inc., has a separate SWPPP and a SPCC plan, developed specifically for their site operations. Overlaps between these existing plans and airport SWPPP are noted below:

Responsibility for executing each of the environmental plans (SWPPP and SPCC) is shared between the airport authority and the tenant (Metalplate, Inc.).

The spill prevention and response measures for the airport SWPPP are adopted from the SPCC plans for both airport authority and tenant.

II. SITE ASSESSMENT

A. **Site Map**. See attached map and the accompanying checklist, worksheet No. 2.

B. **Inventory of Exposed Materials.**

1. All materials that are stored on-site that are exposed to precipitation (potential to contribute pollutants to storm water runoff) are listed on worksheet No. 3.

2. Significant materials that are exposed to precipitation during the three years prior to the date of the permit are listed on worksheet No. 3A.

C. **Past Spills and Leaks**. See worksheet No. 4.

D. **Non-storm Water Discharges**. See worksheet No. 5.

E. **Non-storm Water Discharges - failure to certify**. See worksheet No. 6.

F. **Storm Water Sampling Data**. Use this section to keep storm water sampling data. Since this airport has over 50,000 flight operations per year, the outfalls that convey storm water discharges from deicing/anti-icing areas must be either sampled or certified (Section II. F.2) annually.

1. Sample records and lab results. See attached memorandum dated 11/20/93, after worksheet no. 5, that presents laboratory results.

2. Alternative Certification. Refer to Part VI.B.7 of the general permit (Attachment 1). If dischargers can certify for a given outfall that no exposure of significant materials occurs within the outfall drainage area, the discharge is not subject to monitoring requirements.

G. **Risk Identification and Potential Pollutant Sources**

1. Pollutant Source Summary, see worksheet No. 7.

2. Site Assessment Report, see following report.

SITE ASSESSMENT REPORT

A site assessment inspection must be performed to identify any potential pollutant source on airport property. This section presents a summary assessments of the industrial activities and the potential for exposure of significant materials in the drainage areas covered by the NPDES storm water discharge permit. Worksheet No. 7 may be used to summarize the assessments of pollutant sources and the corresponding storm water management practices. In each sample, a narrative summary is presented below, in addition to the abbreviated worksheet summary.

Fuel Handling

The aviation fuel farm is located on the south end of the airfield adjacent to Hanger 28S. There are two 10,000-gallon above ground storage tanks with secondary containment provided by concrete dike walls. There were minor fuel stains on the ground within the curbed fuel loading and unloading areas. Otherwise, there did not appear to be a significant potential for exposure of aviation fuel to storm water runoff.

The refueling trucks are kept parked north of Hanger 1S. The truck parking area was clean and there were only minor signs of oil and fuel leaks.

Sump fuel is stored in a 250-gallon above ground tank adjacent to the refueling truck parking area. There were minor fuel stains on the pavement within the curbed loading and unloading areas. Otherwise, there did not appear to be significant exposure of fuels from the sump fuel tank truck parking areas to storm water runoff.

Unleaded gasoline for vehicles is stored adjacent to hanger 16S in a 1,000-gallon above ground tank. Secondary containment is provided by concrete curbing.

Hanger 8S

Aircraft are service and repaired at this facility. The following significant materials are stored outdoors:

2 Waste oil drums, 55 gallons each.

The drums are kept closed and the waste oil is pumped from the drums every six months. No secondary containment is provided.

The following significant materials are stored on covered racks outside of the Hanger:

1 mineral spirits (liquid), 55 gallons.
1 stripper (liquid), 300 gallons above ground tank
1 mild soap, 1 gallon container
degreasers and paints, small quantities

The tank with stripping agent is sealed and it is refilled approximately once every two years.

Approximately 3 to 4 aircraft per month are washed outside the hanger using a mild detergent. The waste wash water evaporates on the apron.

Hanger 10S

This hanger is leased to a private drilling company and it is used for maintenance and storage of drilling vehicle. No significant materials are stored outside and there does not appear to be potential for exposure of significant materials to storm water.

Hanger 18S

A 55-gallon barrel of hydraulic oil is stored outside under cover. No secondary containment is provided.

Aircraft Paint Services Hanger 6N

All work is performed in the hanger. Paint is only purchased in the amount needed for each job. Paint solvents are stored in small containers and there is generally less than 20 gallons stored.

Aircraft Wash Racks Hanger 6N

There are three wash racks for cleaning aircraft and vehicles. The racks are drained through a sand box and oil separator, prior to discharge to the city's storm sewer system.

Deicing/Anti-icing Operations

Areas used for deicing/anti-icing aircraft are shown on the site map. Aircraft and pavement deicing/anti-icing activities are routinely performed during winters. For pavement activities, see worksheet No. 10, Pavement Deicing Chemical Release Log. For aircraft activities, some deicing is required during summer months for certain aircraft. A mixture of ethylene based glycol is the primary deicing/anti-icing chemical used for aircraft and potassium acetate for runways. In the past, there were no measures in place to monitor or control these fluids in storm water runoff. Since more than 50,000 flight operations are performed annually, storm water monitoring will be required to comply with the NPDES storm water permit. Controls to limit the BOD impact of deicers/anti-icers on receiving bodies of waters will be selected as part of the airport master drainage plan update. The preliminary BMPs being considered for control of deicing/anti-icing fluids are:

- o Sweeper/vacuum trucks
- o Aircraft deicing/anti-icing locations with collection drains
- o Retention ponds

Metalplate Inc. (Building 45S)

Metalplate, Inc., a tenant, is subject to EPCRA Section 313 reporting requirements. The airport and tenant have a co-permittee agreement for outfall No. 6. The tenant's SWPPP special requirements for EPCRA reporting facilities are addressed in attachment 2 of the airport's SWPPP. See attachment 2 for the Metalplate, Inc., Site Assessment and other specific plan information (appendix 5 of this AC).

All areas described above will be included in periodic and annual compliance inspections as required by the NPDES Storm Water Discharge Permit.

III. PLAN DESIGN - BMP SELECTION

A. **Baseline BMP Narrative Summary** (see worksheet 7A). In addition, baseline BMPs for Metalplate, Inc. are outlined in attachment 2 of this plan.

1. **Good Housekeeping**. Vacuum sweeper trucks follow a daily schedule on all paved areas. The vehicle maintenance shops are cleaned daily and minor spills of fuel and oil products are cleaned immediately. Discarded shipping materials are either recycled or disposed in dumpsters which are emptied weekly.

2. **Preventive Maintenance**. Catch basins and oil/water separators are inspected and cleaned after heavy rains and snow events. Fuel handling trucks and equipment are visually inspected daily for leaks. Equipment valves and connections are routinely tested according to the manufacturers recommendations. The airport and tenants will inspect their own equipment and deicing trucks on a seasonal schedule. Fuel, oil, and deicing chemical storage facilities are routinely inspected for leaks.

3. **Visual Inspections**. Dee McCandless, Operations Coordinator, is responsible for maintaining a qualified inspection and maintenance staff. She receives all inspection and maintenance reports and keeps a log of

follow-up activities. Inspection and maintenance records of storm water control facilities are filed in Section V.B of this plan.

4. **Spill Prevention and Response.** Spills that may impact storm water quality would primarily involve the fuel handling, oil storage, deicing/anti-icing activities, vehicle/aircraft maintenance operations. The site map building reference shows the locations of these activities. Aviation fuel spills and ground vehicle fuel spills that occur in the storage and loading and unloading areas would drain to Outfall No. 8. Oil and pavement deicing chemical drum storage locations are referenced in Section II.G.2. of this document. The discharge points for each of these storage locations are referenced on the site map. Spills that occur while fueling or deicing/activities aircraft will drain according to the site map drainage area delineations.

   Fuel and oil spill clean up procedures are defined in the Fuel Spill Contingency Plan. Equipment and personnel requirements are addressed in the Contingency Plan. Deicing/anti-icing chemical spill prevention and response procedures are being developed in conjunction with the Drainage Master Plan Update which will outline the new runway deicing/anti-icing application procedures. Air carriers will integrate their aircraft ground deicing/anti-icing plan.

5. **Sediment and Erosion Control.** All unpaved areas are planted with grasses and ground covers to limit erosion. Silt fencing is used during minor site work and pavement repairs. When construction activities that involve five acres or more of land disturbance a Notice of Intent will be filed for coverage under the NPDES General Permit for storm water associated with construction activities. For this case, a separate "construction activity" SWPPP will be developed to address the requirements under this type of permit.

6. **Management of Runoff.** Storm water runoff is directed to 11 discharge points, located along the airport property line. Roughly five percent of the runoff is directed to a municipal storm sewer system, operated by the Town of Silverton City. The receiving waters for these outfalls are Bare Creek and Burson Creek.

   The airport drainage system includes a series of catch basins and concrete storm sewers that direct runoff away from the paved areas toward the outfalls and City's storm sewer outfall. Oil/water separators are installed in each of the inlets that drain the apron and hanger areas. Unpaved areas are grassed to prevent erosion.

   Storm water runoff that would contain deicing/anti-icing chemicals drains to outfall Nos. 3, 6, 8 and 10. A storm water sampling program is being developed for these outfalls. The results of the sampling program will be used to design any specific BMPs for control of storm water that contain these chemicals.

B. **Activity Specific BMPs**

1. Fuel loading and unloading areas will be equipped with drip pads to prevent accumulations of fuel on the pavement in these areas.

2. Sump fuel storage area will be equipped with a drip pad.

3. Specific BMPs for deicing/anti-icing areas will be designed upon review of storm water sampling data and recommendations of the master drainage plan update.

4. Concrete curbing will be placed around outdoor oil barrel storage areas.

5. Sand filter drains may be installed for the aircraft cleaning activities adjacent to Hanger 8S. Otherwise these activities may be moved to the existing wash rack facilities.

IV. IMPLEMENTATION SCHEDULE

A. **BMP Schedule Summary**. See worksheet No. 8, attached.

B. **Employee Training Schedules**. See worksheet No. 9, attached.

V. SWPPP EVALUATION

A. **Annual Site Compliance Evaluation Reports**. Use this section to keep the annual reports. The evaluation report will cover the entire airport site, including the tenant facilities. The following is an outline of the Annual Site Compliance Report requirements:

1. Scope of evaluation (describe areas and activities evaluated).
2. List of qualified persons performing the evaluation.
3. Dates of the evaluation inspection.
4. Major observations relating to the plan implementation and effectiveness.
5. Recommended actions.
6. Incidents of noncompliance with plan.
7. Certification of compliance with the SWPPP and Permit.
8. Certification signatures.

B. **Inspection and Maintenance Reports.**

Use this section to keep records of inspections and maintenance activities related to storm water controls and measures.

C. **Plan Revisions.**

Use this section to document revisions to the plan.

VI. GENERAL REQUIREMENTS

A. **Required Signatures**

Any person signing documents under this permit shall make the certification that is contained in the Permit, Part VII.G.2.d. (See Attachment 1, NPDES General Permit).

B. **Plan Location and Public Access**

The plan is required to be maintained on site (airport) unless the USEPA or the operator of a large or medium municipal separate storm sewer system (see section VII.A.) requests that the plan be submitted for review.

C. **USEPA Director-Required Plan Modifications**

Any changes required by the permitting authority shall be made within 30 days, unless otherwise provided by the notification, and the airport authority must submit a certification signed in accordance with Permit, Part VII G., to the USEPA Director that the requested changes have been made.

VII. SPECIAL REQUIREMENTS

A. Additional Requirements for Storm Water Discharges Associated with Industry Activity through Separate Storm Sewer Systems.

Provide a section to include applicable requirements of the municipal storm sewer system that receives airport storm water runoff. The municipal storm sewer system requirements are applicable if the system serves a population of 100,000 or more. In this case, a copy of the airport's Notice of Intent for permit coverage must be submitted to the municipal system operator, and a copy of the airport SWPPP must be submitted to the municipal operator upon request.

B. Additional Requirements for Storm Water Discharges Associated with Industrial Activities from Facilities Subject to EPCRA Section 313 Requirements.

For those tenants who are reporting under EPCRA Section 313 for chemicals that are classified as "water priority chemicals," in accordance with the definition in Part X of the general permit, the following special requirements must be addressed in the airport's SWPPP.

1. **Pollution Prevention Team**. The team must designate a person who will be accountable for spill prevention.

2. **Preventive Maintenance**. The facility plan must specify maintenance schedules related to preventing leaks and other avenues of contact between water priority chemicals and storm water runoff. Corrective action must take place immediately, once threatening conditions are found.

3. **Spill Prevention and Response Procedures**. When a leak or spill of a water priority chemical has occurred, the contaminated soil, material, or debris must be removed promptly and disposed in accordance with Federal, state, and local requirements. These facilities are required to designate a person responsible for spill prevention response and reporting procedures.

4. **Employee Training**. Annual training is required on each of the following topics:

   - Preventive maintenance and spill prevention and response.

   - Pollution control laws and regulations

   - The facility's overall pollution prevention plan

   - Features and operations designed to minimize discharges of water priority chemicals

5. **Professional Certification**. The facility plan must be reviewed and certified by a registered professional engineer. The facility plan must be recertified every three years or after the plan has been significantly charged.

POLLUTION PREVENTION TEAM MEMBER ROSTER	**Worksheet #1** **Completed by:** Bethel Burson **Title:** Airport Manager **Date:** Nov 12, 1994
Leader: Bethel Burson	Title: Airport Manager Office Phone: (904) 267-8766
Responsibilities:	
Signatory authority; coordinates all stages of plan development and implementation for all airport and tenant (co-permittee) facilities; coordinate employee training programs; keeps all records and ensures reports are submitted.	
Members:	
(1) Ms. Dee McCandless	Title: Airport Operations Coordinator Office Phone: (904) 267-4442
Responsibilities:	
Overall plan assessment and design, storm water monitoring, spill response coordinator. Conduct employee training on storm water related topics.	
(2) Mr. Gene Menger	Title: Plant Manager, Metalplate, Inc. Office Phone: (904) 267-8200
Responsibilities:	
Signatory authority for co-permittee, Metalplate, Inc. Coordinates with airport authority. Responsible for tenant plan's special requirements related to EPCRA Section 313 reporting facility. Coordinates spill prevention and response for Metalplate, Inc. site. See Attachment No. 2 for tenant plan.	
(3) _____	Title: _____ Office Phone: _____
Responsibilities:	
(4)	Title: _____ Office Phone: _____
Responsibilities:	

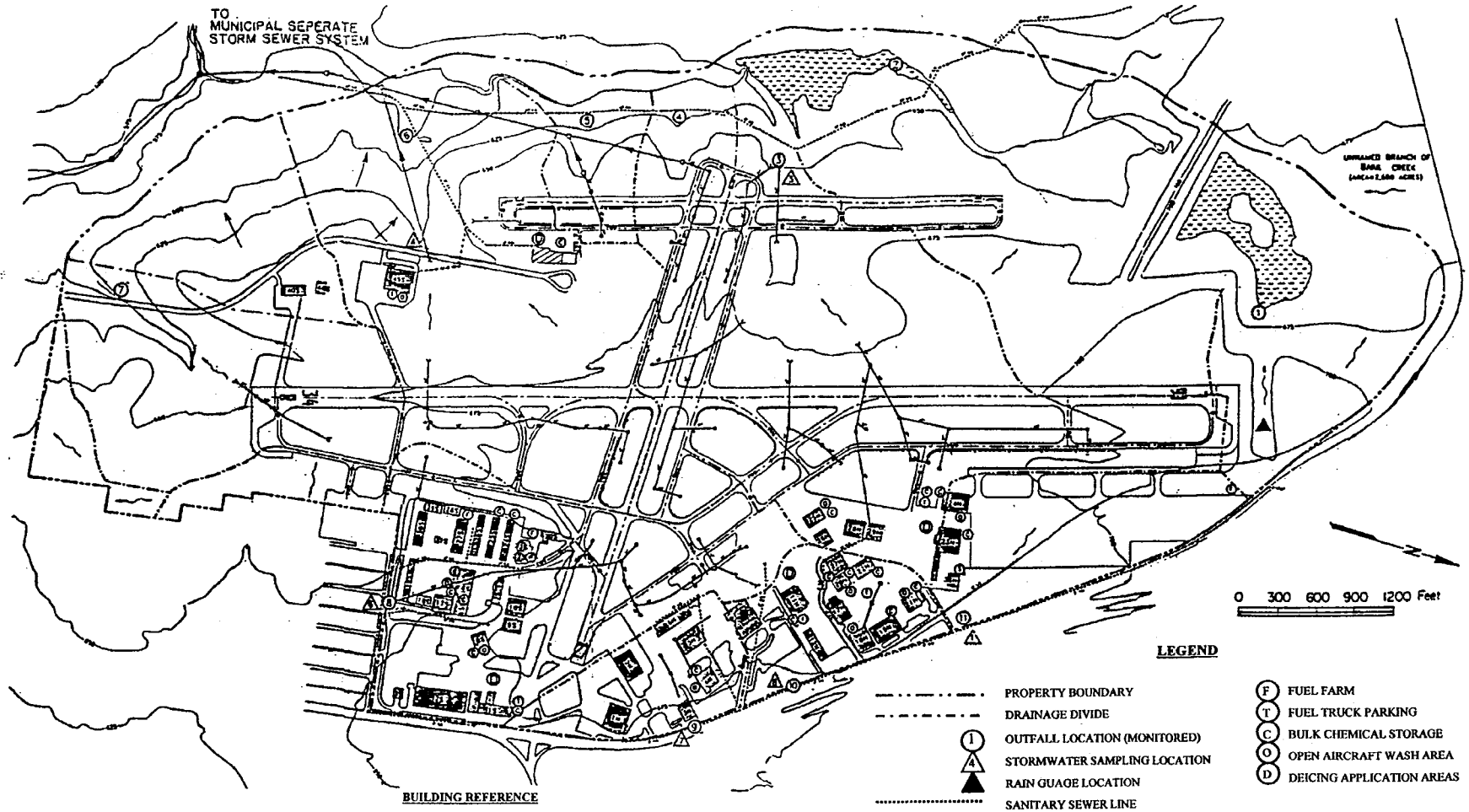
DEVELOPING A SITE MAP	**Worksheet #2** **Completed by:** Dee McCandless **Title:** Operations Coordinator **Date:** Dec 10, 1994

Directions: Draw a site map of your airport including a footprint of all buildings, facilities, structures, paved areas, and parking lots. The information below describes additional elements required by USEPA's General Permit.

USEPA's General Permit requires that you indicate the following features on your site map:

- All outfalls and storm water discharges
- Drainage areas of each storm water outfall
- Structural storm water pollution control measures, such as:
  - Flow diversion structures
  - Oil/water separators
  - Retention/detention ponds
  - Vegetative swales
  - Sediment traps
- Name of receiving waters (or if through a Municipal Separate Storm Sewer System)
- Locations of exposed significant materials
- Locations of past spills and leaks
- Locations of high-risk, waste-generating areas and activities common on industrial sites such as:
  - Fueling stations (vehicle and fuel farms)
  - Aircraft/Vehicle/equipment washing and maintenance areas
  - Area for unloading and loading materials
  - Aboveground tanks for liquid storage
  - Industrial waste management areas (waste piles, treatment plants, disposal areas)
  - Outside storage areas for raw materials, by-products, and finished products
  - Outside pavement and aircraft deicing/anti-icing activity areas
  - Other areas of concern (specify): BLDG 45S, Metalplate, Inc.)

AIRPORT SITE MAP



BUILDING REFERENCE

1S	Jet Aviation	24S	Leased T-Hangars	5N	Empty	27N	Resources
2S	Flight Training	25S	Leased T-Hangars	6N	Contract Aircraft Painting	28N	Aircraft
3S	Fire Station	26S	Leased T-Hangars	11N	Jet Fuel	29N	Jet Hangar
8S	Tex Air	28S	Airplane Factory	12N	Aviation	36N	Air Industries
9S	Empty	29S	Aircraft Paint Services	17N	Jet Hangar		
10S	Drilling Co.	30A	Leased T-hangars	18N	Jet Hangar		
15S	Advanced Aviation	31S	Aircraft Sales	19N	Air Center		
16S	Hawk Airlines	40S	Aviation	20N	Aviation		
17S	Empty	45S	Metalplate, Inc.	21N	Holding		
18S	T. Products	48S	Empty	22N	Companies		
19S	Leased T-Hangars	1N	Flight Center	23N	Jet Hangar		
20S	Fire Station	2N	Aircraft	24N	Instruments		
22S	Lubricants	3N	Tech Avionics	25N	Railroad		
23S	Lubricants	4N	Avionics	26N	Jet Hangar		

COUNTY AIRPORT
SILVERTON CITY, TEXAS
DECEMBER 3, 1992

MATERIAL INVENTORY

Worksheet #3
Completed by: Dee McCandless
Title: Operations Coordinator
Date: Dec 12, 1994

Directions: List all materials used, stored, or produced on-site. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A *if the material has been exposed* during the last 3 years.

Material	Purpose/Location	Quantity (1000 gallon)			Quantity Exposed in Last 3 Years	Likelihood of contact with storm water. If yes, describe reason.	Past Significant Spill or Leak	
		Used	Produced	Stored			Yes	No
Jet A, A-1 Fuels	28S			10		Possible during aircraft fueling		x
Avgas 80, 100, 100 LL	28S			10		Possible during aircraft fueling		x
Sump Fuel	1S			0.25		Possible during tank filling		x
Waste oil	8S			0.11		Possible during tank filling		x
Ethylene glycol	1S,11N,23N, and WMF ramp			20.0		Exposure during each operation at all deicing/anti-icing areas, rwy, twys.	x	
Unleaded gasoline	16S			1.0		Possible during fuelling		x
Mineral Spirits	8S			0.055		Only during uncontrolled spill; no secondary containment		x
Stripper	8S			0.30		Yes, evaporates on pavement		x
Mild Soap	8S			-		Only during uncontrolled spill; no secondary containment		x
Degreasers, Paints	8S			-		Only during uncontrolled spill; no secondary containment		x
Water Methanol	18S			0.11		Only during uncontrolled spill; no secondary containment		x
Engine Oil	18S			0.055		Only during uncontrolled spill; no secondary containment		x
Soap	18S			0.055		Only during uncontrolled spill; no secondary containment		x
Paints, Solvents	6N			-		Only during uncontrolled spill; no secondary containment		x
Varsol Naphtha	6N			0.20		Only during uncontrolled spill; no secondary containment		x

DESCRIPTION OF EXPOSED SIGNIFICANT MATERIAL

Worksheet #3A
Completed by: Dee McCandless
Title: Operations Coordinator
Date: Dec. 2, 1994

Directions: Based on your material inventory, describe the significant materials that were exposed to storm water during the past three years and/or are currently exposed. For the definition of "significant materials" see advisory circular.

Description of Exposed Significant Material	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of Storage or Disposal (e.g., pile, drum, tank)	Description of Material Management Practice (e.g., pile, covered, drum sealed)
Ethylene glycol	intermittent	20,000 gal	all apron areas	dilution in runoff	See Drainage Master Plan
Soap	intermittent	---	aircraft wash racks	evaporation	Sand filter drains

LIST OF SIGNIFICANT SPILLS AND LEAKS

Worksheet #4
Completed by: Dee McCandless
Title: Operations Coordinator
Date: Dec. 2, 1994

Directions: **Record below all significant spills and significant leaks of toxic or hazardous pollutants that have occurred at the facility in the three years prior to the effective date of the permit.**

Definitions: **Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of reportable quantities.**

1st Year Prior

Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	
1992	x		all aprons	ethylene glycol	7,000 gal	deicing trucks	aircraft icing	--	F	use as needed

2nd Year Prior

Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	
1993	x		all aprons	ethylene glycol	9,000 gal	deicing trucks	aircraft icing	--	F	use as needed

3rd Year Prior

Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	
1994	x		all aprons	ethylene glycol	7,800 gal	deicing trucks	aircraft icing	--	F	use as needed

NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION			**Worksheet #5** **Completed by:** Dee McCandless **Title:** Operations Coordinator **Date:** Dec. 20, 1994		
Date of Test or Evaluation	**Outfall Directly Observed During the Test** (Identify as indicated on the site map)	**Method Used to Test or Evaluate Discharge**	**Describe Results from Test for the Presence of Non-Storm Water Discharge**	**Identify Potential Significant Sources**	**Name of Person Who Conducted the Test or Evaluation**
11/19/94	Outfall No. 8	Field water quality test	See attached report on water quality analysis. Test indicates groundwater.	jet fuel	McCandless
11/16/94	Outfall Nos. 1-7, 9-11	visual	no discharge observed		McCandless
note:	Outfall No. 6 is a discharge point for Metalplate, Inc. Since this tenant industry uses water priority chemicals and reports under EPCRA Section 313, the certification for this discharge point is provided by a registered professional engineer.				

CERTIFICATION

I, Walter M. Frucht (responsible corporate official), certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel property gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title (type or print) Walter M. Frucht, P.E.	**B. Area Code and Telephone No. (904) 267-8761**
C. Signature	**D. Date Signed Dec. 20, 1994**

MEMORANDUM REPORT

FROM: Dee McCandless

TO: Bethel Burson

DATE: 11/20/93

SUBJECT: Non-storm Water Discharges at Outfall No. 8.

DATE OF SAMPLING: 11/19/93

Parameter	Quantity	Sample Type
pH	8.1	grab
Total Copper	0.0 ppm	
Phenols	<0.1 ppm	
Total Res. Chlorine	<0.1 ppm	
Detergents	0.2 ppm	
Boryer Color	#93 (transparent)	
Oil and Grease	0.0 ppm	

NON-STORM WATER DISCHARGE ASSESSMENT AND FAILURE TO CERTIFY NOTIFICATION

Worksheet #6
Completed by: Dee McCandless
Title: Operations Coordinator
Date: Dec 11, 1994

Directions: If you cannot feasibly test or evaluate an outfall, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.

List all outfalls not tested or evaluated, describe any potential sources of non-storm water pollution from listed outfalls, and state the reason(s) why certification is not possible. Use the key from you site map to identify each outfall.

Importance Notice: A copy of this notification must be signed and submitted to the Director (issuing authority) within 180 days of the effective date of this permit.

Identify Outfall Not Tested/Evaluated	Description of Why Certification is Infeasible	Description of Potential Non-Storm Water Pollution
ALL OUTFALLS TESTED		

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations, and that such notification has been made to the Director within 180 days of _____ (date permit was issued), the effective date of this permit.

A. Name & Official Title (type or print) Bethel Burson	B. Area Code and Telephone No. (904) 267-8766
B. Signature	D. Date Signed: 12/9/94

POLLUTANT SOURCE IDENTIFICATION

Worksheet #7
Completed by: Dee McCandless
Title: Operations Coordinator
Date: Dec 11, 1994

Directions: List all identified storm water pollutant sources and describe existing management practices that address those sources. In the third column, list BMP options that can be incorporated into the plan to address remaining sources of pollutants.

Storm Water Pollutant Sources	Existing Management Practices	Description of New BMP Options
1. Fuel handling adjacent to tank farm	Concrete curbing	Add drip pads to prevent fuel from accumulating on pavement
2. Sump (waste) fuel storage area	Concrete curbing	Add drip pads, per item 1.
3. Hanger 8S - aircraft washing area	none	Sand filter drains or abandon hanger 8S wash operations and move to wash racks
4. Aircraft deicing/anti-icing areas	none	Sweeper/vacuum trucks, designated deicing/anti- icing areas, retention ponds
5. Hangers 8S, 12S - oil storage		Install concrete curbing for secondary containment
6.		
7.		
8.		
9.		
10.		

BMP IDENTIFICATION	**Worksheet #7A** **Completed by:** Dee McCandless **Title:** Operations Coordinator **Date:** Dec 11, 1994

Directions: Describe the Best Management Practices that you have selected to include in your plan. For each of the baseline BMPs, describe actions that will be incorporated into the airport or facility operations. Also describe any additional BMPs that you have selected. Attach additional sheets if necessary.

BMPs	Brief Description of Activities
Good Housekeeping	Add drip pads at the refueling truck loading and unloading areas.
Preventative Maintenance	Routine inspection of storm water inlet controls, fuel handling areas (such as oil/water separators), and other outdoor material storage facilities.
Inspections	Routine inspection of all significant materials handling in the areas regulated by the permit.
Spill Prevention & Response	Continue existing program and include methods for controlling runoff that contains deicing/anti-icing fluids during storm events.
Sediment and Erosion Control	All unpaved areas are grassed or planted with ground cover.
Management of Runoff	Implement storm water monitoring activities at outfalls serving the areas where deicing/anti-icing takes place.
Additional BMPs (Activity-specific and Site-specific)	Continue investigation of storm water controls for the deicing/anti-icing areas.

IMPLEMENTATION	Worksheet #8 Completed by: Dee McCandless Title: Operations Coordinator Date: Dec 11, 1994

Directions: Develop a schedule for implementing each BMP. Provide a brief description of each BMP, the steps necessary to implement the BMP (i.e., any design or construction), the schedule for completing those steps (list dates) and the person(s) responsible for implementation. Attach additional sheets if necessary.

BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Actions	Person Responsible for Action(s)	Notes
Good Housekeeping	1. Install fuel handling drip catch basins	12/18/94	McCandless	
	2. Develop training program	2/1/95	Choy	
	3. Conduct training	4/1/95	Choy	New employees
Preventative Maintenance	1. Routine inspection of storm water controls	ongoing	McCandless	
	2.			
Inspections	1. Develop schedule for inspection of storm water controls	2/1/95	Cook	
Spill Prevention & Response	1. Develop training schedule	2/1/95	Quinn	
	2. Conduct training	4/1/95	Quinn	Annual update
Sediment and Erosion Control	1. Maintain grass and ground cover in all unpaved areas	ongoing	May	
	2.			
Management of Runoff	1. Develop storm water monitoring program	4/1/95	Newton	
	2.			
Additional BMPs (Activity-specific and Site-specific)	1. Inspect and maintain deicing runoff controls per Drainage Plan update	est. 10/95	Farzanigan	Final schedule on completion of improvements
	2.			

EMPLOYEE TRAINING	Worksheet #9. Completed by: Bethel Burson Title: Airport Manager Date: 3/23/94

Directions: Describe the employee training program for each facility or specific activity. At a minimum the program should, if topics apply, address good housekeeping, spill prevention and response, and material management practices. Provide a schedule for the training program and the roster ID number that lists the employees who attended the training sessions. Attach additional sheets if necessary.

Training Topics	Brief Description of Training Program and Materials (e.g., posters, newsletters, course, films)	Scheduled for Training (list dates)	Roster ID Number
Spill Prevention & Response	1. Fueling and pavement deicing operators - seminar, video	March & October	Fuel and deicing equipment operators
	2.		
	3.		
Good Housekeeping	1. Seminar on pollution prevention plan	April	All employees
	2.		
	3.		
Material Management Practices	1. Introduce hazardous material labels - workbook	March	Equipment operators
	2.		
	3.		
Other Topics	1. Storm water monitoring - workbook, video	April	Spill response team
	2.		
	3.		
	1.		
	2.		
	3.		

DEICING/ANTI-ICING RELEASES	Worksheet No. #10 Completed by: Dee McCandless Title: Operations Coordinator Date: Dec 30, 1994

Directions: **Record the releases of deicing/anti-icing chemicals as an aggregate of all deicing/anti-icing operations that occur during a 24 hour period. Attach additional sheets if necessary. (Information still needed for quantities used by airlines and other tenants).**

Date	Location (rwy/twy/apron)	Type of Deicing/Anti-icing Product by tradename	Estimated Quantity (gallons)	Estimated Quantity (tons)	Comments
12/8/94	1. All Aprons	potassium acetate	1,000		Total deicing operations for given date
	2. All taxiway	potassium acetate	3,150		
	3. Runway	potassium acetate	2,550		
12/9/94	1. All Aprons	potassium acetate	1,200		
	2. All taxiway	potassium acetate	3,450		
	3. Runway	potassium acetate	2,750		
12/15/94	1. All Aprons	potassium acetate	1,000		
	2. All taxiway	potassium acetate	3,100		
	3. Runway	potassium acetate	2,480		
12/28/94	1. All Aprons	potassium acetate	1,100		
	2. All taxiway	potassium acetate	3,275		
	3. Runway	potassium acetate	2,650		
12/29/94	1. All Aprons	potassium acetate	850		
	2. All taxiway	potassium acetate	2,300		
	3. Runway	potassium acetate	1,840		
	1.				
	2.				
	3.				

APPENDIX 5. SAMPLE OF AN EPCRA SECTION 313 AIRPORT TENANT FACILITY SWPPP

1. Attachment No. 2 addresses the SWPPP special requirements for an airport tenant subject to the reporting requirements under EPCRA Section 313. In this sample, Metalplate, Inc. (a fictitious corporation), the airport tenant in question, reports under this regulation. Accordingly, separate site assessment, plan design, evaluation, and implementation of BMPs are prepared to address the special requirements for the Metalplate site. Attachment 2 is a supplement to the airport's overall SWPPP because the airport and the tenant have a co-permittee agreement for the common drainage area that contributes storm water runoff to outfall #6.

ATTACHMENT NO. 2

SUPPLEMENT TO COUNTY AIRPORT STORM WATER POLLUTION PREVENTION PLAN

METALPLATE, INC. SPECIAL REQUIREMENTS FOR EPCRA SECTION 313 REPORTING FACILITY

December 1994

Emergency Contact: Mr. Gene Menger
Title: Plant Manager
Phone: 903-426-8200

I. PLANNING AND ORGANIZATION

A. **Member Roster**. See Airport SWPPP worksheet No. 1.

B. **Consistency with Other Plans**. See Airport SWPPP.

II. SITE ASSESSMENT

A. **Site Map**. See attached map in airport SWPPP and the accompanying checklist, airport SWPPP worksheet No. 2.

B. **Material Inventory**.

All Metalplate Inc., significant materials that are exposed to precipitation are listed on worksheet No. 3, Attachment 2.

C. **Past Spills and Leaks**. Not applicable.

D. **Non-storm Water Discharge**. See Airport SWPPP worksheet No. 5.

E. **Non-storm Water Discharge - Failure to Certify**. Not applicable.

F. **Storm Water Data**. The general permit specifies that Metalplate, Inc., reporting under EPCRA Section 313, must perform semi-annual storm water monitoring for outfall no. 6. Two periods for monitoring are defined: (1) January - June, and (2) July - December. The results are due no later than the 28th of January, following the sampling year. The results of sampling periods must be presented on separate "Discharge Monitoring Report Forms" certified by a registered professional engineer, and submitted to:

Director of the NPDES Program
USEPA, Region VI, Water Management Division, (6W-EA)
Storm Water Staff
1445 Ross Avenue
Dallas, TX 75202

The storm water samples must be analyzed for: oil/grease, BOD, COD, TSS, TKN, total phosphorous, acute whole effluent toxicity, any Section 313 water priority chemicals for which the facility is subject to report under Section 313 of EPCRA. At a minimum, Metalplate, Inc., is subject to reporting for the following water priority chemicals:

- Trichlorethylene
- Hydrochloric Acid
- Phosphoric Acid
- Nitric Acid
- Chromic Acid

These chemicals must be analyzed in addition to the constituents listed above, for each storm water sample.

G. **Risk Identification and Potential Pollutant Sources**

1. **Pollutant Source Identification Summary, see worksheet No. 7, Attachment No. 2.**

2. **Site Assessment Report.**

The shop contains a vapor degreaser which utilizes trichlorethylene.

There is a concrete retaining wall around the storage tank area which provides secondary containment within the plating shop. The floor drains are connected to an acid neutralization system that provides pretreatment to wastewater. The treated waste is tested prior to discharge to the sanitary sewer system.

The plating shop has a covered loading dock for transfer of materials. The drains in the loading dock area are also connected to the above pretreatment system.

Most of the facility chemicals are stored outdoors under cover with fenced security. A three foot concrete retaining wall provides secondary containment for the outdoor storage area. Drums of absorbent materials are kept in the storage area for spill control.

The nearest storm drain is located approximately 150 feet from the facility. The spill response team has a plug that may be installed in the drain pipe to prevent spills or leaks from entering the town's storm drain system.

All areas described above will be included in periodic and annual compliance inspections as required by the NPDES Storm Water Discharge Permit.

III. PLAN DESIGN - BASELINE BMP SELECTION NARRATIVE SUMMARY (SEE WORKSHEET 7A, ATTACHMENT 2)

A. **Good Housekeeping**. Chemical storage and handling areas are kept clean and free of obstacles. Drum storage is organized to allow free access during transfer of chemicals.

B. **Preventive Maintenance**. Chemical handling equipment, storage tanks, valves, pumps, and pipelines are routinely tested according to the manufacturer's recommendations. The floor drain system is inspected monthly for obstructions and leaks.

C. **Visual Inspections**. Gene Menger, plant manager, is responsible for maintaining a qualified inspection and maintenance staff. He receives all inspection reports and keeps a log of inspection follow-up activities. Inspection records of storm water control facilities are filed in Section V.B of the airport SWPPP. Inventory of chemicals is taken monthly.

D. **Spill Prevention and Response**. Spills that may impact storm water quality would occur at either the loading docks or outdoor chemical storage areas. The airport SWPPP site map building reference shows the locations of these activities. A spill response team is ready to respond to leaks and spills. Drums of absorbent materials are kept in the chemical transfer areas.

E. **Sediment and Erosion Control**. All unpaved areas are planted with grasses and ground cover to limit erosion. Silt fencing is used during minor site work and pavement repairs.

F. **Management of Runoff**. On site runoff is controlled by means of grading and diversion around the chemical storage and handling areas. Storm water runoff is directed to outfall no. 6 or the local publicly owned treatment works (POTW). The receiving waters for these outfalls are New Castle Creek. Storm water monitoring will be performed at sampling location No. 6, downstream of outfall No. 4.

IV. IMPLEMENTATION SCHEDULE

A. **BMP Schedule Summary**. See worksheet No. 8, Attachment No. 2.

B. **Employee Training Schedule**. See worksheet No. 9, Attachment No. 2.

END

Attachment No. 2
MATERIAL INVENTORY
Metalplate, Inc.

Worksheet #3
Completed by: Gene Menger, P.E.
Title: Manager
Date: December 15, 1994

Instructions: List all materials used, stored, or produced onsite. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A if the material has been exposed during the last 3 years.

Material	Location	Quantity (units)			Quantity Exposed in Last 3 Years	Likelihood of contact with storm water. If yes, describe reason.	Past Significant Spill or Leak	
		Used	Produced	Stored			Yes	No
Isopropyl alcohol (liquid)	45S		275			Drums stored under cover inside 3-foot concrete retaining wall		x
Trichloroethylene (liquid)	45S		110			Storm water contact unlikely		x
Paint stripper	45S		300					x
Soap (liquid)	45S		550					x
Lubricant	45S		55					x
Solvent	45S		55					x
Hydrochloric acid (liquid)	45S		500					x
Phosphoric acid (liquid)	45S		100					x
Chromic acid	45S		1000 lb					x
Plating chemicals (liquid)	45S		220					x
Nitric acid (liquid)	45S		300					x
Chrome stripper (dry)	45S		500 lb					x

Attachment No. 2 POLLUTANT SOURCE IDENTIFICATION Metalplate, Inc.	**Worksheet #7** **Completed by:** Gene Menger, P.E. **Title:** Manager **Date:** Dec. 15, 1994

Instructions: **List all identified storm water pollutant sources and describe existing management practices that address those sources. In the third column, list BMP options that can be incorporated into the plan to address remaining sources of pollutants.**

Storm Water Pollutant Sources	Existing Management Practices	Description of New BMP Options
1. Covered, outdoor, fenced storage area	Drums are stored inside concrete retaining wall	None required
2.	Absorbent materials are stored with other chemicals	
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

Attachment No. 2 BMP IDENTIFICATION Metalplate, Inc.	**Worksheet #7A** **Completed by:** Gene Menger, P.E. **Title:** Manager **Date:** Dec. 15, 1994

Directions: Describe the Best Management Practices that you have selected to include in your plan. For each of the baseline BMPs, describe actions that will be incorporated into the airport or facility operations. Also describe any additional BMPs that you have selected. Attach additional sheets if necessary.

BMPs	Brief Description of Activities
Good Housekeeping	Chemical storage and handling areas are kept clean and free of obstacles. Drums are stored in a manner that minimizes the potential for damage and spills.
Preventative Maintenance	Chemical handling equipment is routinely inspected. Facility piping, pumps, and chemical storage tanks are routinely inspected for failure conditions. The chemical drains and acid neutralization system are checked for obstructions and leaks.
Inspections	Visual inspections of chemical handling facilities are performed daily. Monthly inspections include material inventory.
Spill Prevention & Response	Loading and unloading of plating chemicals is performed inside concrete retaining wall (outdoors) and behind curbed area inside covered loading dock. Absorbent materials are readily available to contain spills.
Sediment and Erosion Control	Unpaved areas are grassed or planted with ground cover.
Management of Runoff	Storm water is directed away from chemical storage and handling areas.
Additional BMPs (Activity-specific and Site-specific)	No additional BMPs are planned.

Attachment No. 2 IMPLEMENTATION Metalplate, Inc.	**Worksheet #8** **Completed by:** Gene Menger, P.E. **Title:** Manager **Date:** Dec. 15, 1994

Directions: **Develop a schedule for implementing each BMP. Provide a brief description of each BMP, the steps necessary to implement the BMP (i.e., any design or construction), the schedule for completing those steps (list dates) and the person(s) responsible for implementation. Attach additional sheets if necessary.**

BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Actions	Person Responsible for Action(s)	Notes
Good Housekeeping	1.			
	2.			
Preventative Maintenance	1.			
	2.			
Inspections	1.			
	2.			
Spill Prevention & Response	1. Employee training	March & Oct	Menger	
	2. Inspect spill response equipment	Weekly	Menger	
	3. Inspect chemical handling equipment	each shift	Menger	
Sediment and Erosion Control	1.			
	2.			
Management of Runoff	1. Storm water monitoring	Jan – June	Menger	Outfall #6
	2. (semi-annual)	July – Dec	Menger	Outfall #6
	3.			
Additional BMPs (Activity-specific and Site-specific)	1.			
	2.			
	3.			

Attachment No. 2 EMPLOYEE TRAINING Metalplate, Inc.	Worksheet #9. Completed by: Gene Menger, P.E. Title: Manager Date: 12/15/94

Directions: Describe the employee training program for each facility or specific activity. At a minimum the program should, if topics apply, address good housekeeping, spill prevention and response, and material management practices. Provide a schedule for the training program and the roster ID number that lists the employees who attended the training sessions. Attach additional sheets if necessary.

Training Topics	Brief Description of Training Program and Materials (e.g., posters, newsletters, course, films)	Scheduled for Training (list dates)	Roster ID Number
Good Housekeeping	1. Seminar on pollution prevention plan.	April (annual)	All employees
	2. Review plan requirements	April (annual)	All employees
	3.		
Spill Prevention & Response	1. 3 day emergency response training.	March & October	Spill response team
	2. 1 day annual refresher/workbook, videos.	March & October	Spill response team
	3.		
Material Management Practices	1. 1 day hazardous waste management/ workbook, videos	March (annual)	All employees
	2.		
	3.		
Other Topics	1. Storm water monitoring/ workbook, video	February (annual)	Spill response team
	2.		
	3.		
Pollution Control Laws and Regulations	1. Seminar/workbook	January (annual)	PPP team
	2.		
	3.		

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